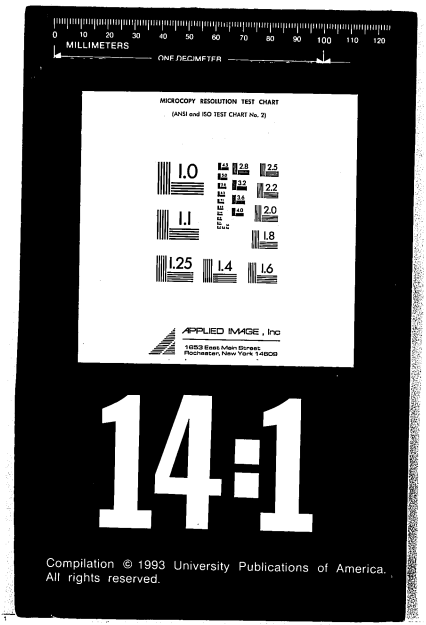

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Thomas A. Edison Papers

A SELECTIVE MICROFILM EDITION

PART III
(1887–1898)

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1993

Edison signature used with permission of McGraw-Edison Company.

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START

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A Note on the Sources

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1889. Electric Light - General (D-89-33)

This folder contains correspondence and other documents relating to electric lighting and power. Included are letters pertaining to the incandescent lamp, the alternating current controversy, and electrocution experiments conducted by Harold P. Brown, a New York electrical engineer. There are also documents concerning lamp tests conducted by the Chicago, Burlington & Quincy Railroad and by the Niagara River Hydraulic Tunnel Co., which was established to develop a hydroelectric power system in Buffalo, N.Y. Edison advised the company about the construction of central stations and about a direct-current distribution system. A series of lengthy memoranda written by Edison on this subject can be found near the end of the folder. There is also a satiric pamphlet relating to the patent litigation of the Edison Electric Light Co. Among the correspondents are H. Ward Leonard, an electrical engineer involved in lamp tests, and Edward D. Adams, president of the Cataract Construction Co. and a promoter of the Niagara Falls project.

Approximately 80 percent of the documents have been filmed. The following categories of documents have not been filmed: routine requests for information about electric lighting, electrocution, and Edison's fiber search; letters of transmittal; other routine business correspondence; duplicate copies of selected documents.

Lamps

General Agents The Edison United Mfg. Co.
The Chicago Edison Co.
Special Agents and Licensed Constructors for the Edison Electric Light Co.

H. Ward Leonard.
E. H. Izard.

Electrical construction and repair work for the Edison System, Arc Enclosing Motors, Storage Batteries, etc., a Specialty.
A full stock carried of all supplies required by Edison Plants.

Dic. by H.W.L.

LEONARD & IZARD,

Consulting and Contracting Electrical Engineers,

ROOM 425, "THE ROOKERY."

Address reply to .....

Chicago, Jan. 5th, 188 9

Mr. Thomas A. Edison,

Orange, N.J.

Dear Sir:--

The C. B. & Q. Railroad Co. you will remember made a test upon the Edison new lamps not long since. A life test upon Edison lamps, Sawyer-Mann, United States & Perkins lamps took place a day or two since, and thinking you may be interested in the various measuremenis of the best lamps made by the various companies to-day, I send you herewith data of this character. All this data applies to the condition of the lamps as they started out upon the life test. This life test will be continued until the positive position of the various lamps as regards superiorty is is arrived at. If there are any points in connection with the lamps of various makers which you would like to have investigated, I will take pleasure in giving such matters attention. Each company has entered 15 or more lamps.

Yours very truly,

Leonard & Izard.

per H. Ward Leonard

[ENCLOSURE]

Lamps

Life Test by C. L. & C. Ry. Co. upon Incandescent Lamps.

Data regarding lamps at beginning of test.

Chicago, Jan. 1 st., 1900.

	Edison	Edison	Union Switch	Sawyer-Man	Perkins
Make	110	100	110	107	110
Rated C. P.	16	16	16	20	16
Average Horizontal C.P.	15.2	15.8	22.1	22.2	11.8
Average Watts per C. P.	3.54	3.3	3.45	3.67	4.04
Highest C. P.	16.9	17.3	23.4	23.0	15.6
Lowest C. P.	13.7	14.4	15.8	17	10.2
Least watts per C. P.	3.26	3.03	2.98	3.05	3.78
Greatest watts per C. P.	3.65	3.52	4.26	4.24	3.95
Highest average reading at one point	16.5	17.7	23.7	22.2	13.1
Lowest average reading at one point.	12.9	12.7	15.1	22.2	11.6
Average reduction	1.16	1.24	1.7	1	1.01

(Yours Respectfully)

J. J. CALLOW,

Inventor and Manufacturer of

Patent Indestructible Metallic Graining Tools,

FOR RAPIDLY GRAINING ALL WOODS IN OIL OR DISTEMPER,

PATENT · METALLIC · FRESCO · STENCILS,

METAL SIGN LETTERS,

AND DEALER IN ALL KINDS OF GRAINERS' TOOLS AND SPECIALTIES GENERALLY.

ABCDEFGH

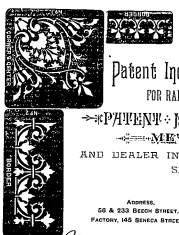
DESIGN OF METAL SIGN LETTERS.

ADDRESS,
66 & 233 BEECH STREET.
FACTORY, 145 SENECA STREET.

Cleveland O. January 7th 1889

Thomas Edison Esq
New York City
& Newjersey.

Dear Sir Noticing an item in Our Paper Sire about an Electric consolidation scheme. To be known as the Edison Central Electric & to be located in West Orange &c My reason for addressing You is this. I have valuable Patents for the U.S. Canada France, England & Germany for an Electric process of manufacturing metal goods such as Street numbers & Names. Filigree ornaments or Metal Brackets - all kinds of Lettering Stencils & Stencils for ornamenting Rail Road Cars - all kinds of Metal letters for Signs & in fact Everything in Metal that has Name & is cast and with dies. but no dies Can be made as fine as & produce work Equal to My Electric Metal process it Can be done at 1/4 the price yes 1/8 the price & similar work done Another Way. I would say further & make the process more familiar & plain. Some time in 1884/86 I was in



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Inventor and Manufacturer of

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PATENT · METALLIC · FRESCO · STENCILS,

METAL SIGN LETTERS,

AND DEALER IN ALL KINDS OF GRAINERS' TOOLS AND SPECIALTIES GENERALLY.

DESIGN OF METAL SIGN LETTERS.

ADDRESS,
66 & 233 BEECH STREET.
FACTORY, 145 SENECA STREET.

2 Cleveland, O., 188

New York City with Samples and Jam Mr Bergman was so deeply interested in the invention that he took the small Samples I had with me up to your Room in the block where your office is or was located at the time. So you have actually seen some of the metal work produced by my invention. Mr Bergman made me an Offer of $1000 for my right City for Generalities or Chandelier Work which he wanted it for at that time. Now my idea is in writing you, as you now Company with your Plants in Every City for Light the same wires could be connected with a Motor to drive the Electric Machine This will do the work of My invention & make as Metal Work Letter Stencils &c above described & be Controlled by said Company on royalties & patents or sub Companies organized in Each City so as to Pay an minimum profit, My patents are yet all intact Except the State of Illinois which is now sold for $2000 in Chicago & New York City is spoken for but not yet sold all other patents are clear for the U.S.A. Now if you are interested in the

J. J. Callow,

Inventor and Manufacturer of

Patent Indestructible Metallic Graining Tools,

FOR RAPIDLY GRAINING ALL WOODS IN OIL OR DISTEMPER,

PATENT · METALLIC · FRESCO · STENCILS,

METAL SIGN LETTERS,

AND DEALER IN ALL KINDS OF GRAINERS' TOOLS AND SPECIALTIES GENERALLY.

ADDRESS,
56 & 233 SECOND STREET,
FACTORY, 145 SENECA STREET,

DESIGN OF METAL SIGN LETTERS.

3 Cleveland, O., 188

Products of Electricity and as Dynamos & Motors
Are necessary for its Manufacture. My Idea in
writing You this long & Elaborate letter was with a
view of visiting this department of Electric forces
& Form now an organized plant, being in the
same family of the Electric arts. If you think
favorable of this and will send in one of Your
Agents to examine into my inventions I should be
pleased & show & explain the merits of the invention
So that he can fully describe it & You with the
View in end above suggested. Please give this
letter a fair & honest consideration for I mean
business & can prove that all I claim in a fact
Produced by over 6 years attentive study & the
Special art which is entirely entirely unposed
in the Electric art & not insurance but Facts which
I can & will be glad to show & Prove to You.
Please let me hear from You Truly Yours J. J. Callow

Cable Brown Prop. Enclosed Herewith &

Say we can't go into it but there
are 150 Edison light stations, others
after the busy hours of Lighting
have undimmed Electricity
which are a contract for Cooking
purposes they would sell cheap
And he tells us get up a Co
Co to utilize his process & then
Co contract with the Edison Light Co
for Electricity

Edison Electric Lt Co

Law Offices

EATON & LEWIS

S.B. EATON
EUGENE H. LEWIS

120 Broadway (EQUITABLE BUILDING)

New York Jan 8 1889

My dear Edison -

I have had my opinion on
Jour Light Co. contracts, sent here =
with - I fear the 17 Year matter
will surprise you - I will be out
shortly & talk it over -

Sincerely Yours

S. B. Eaton

To

T. A. Edison Esq.

[FROM FRANK MCGOWAN?]

Cala. Jany 9th 1889

T. A. Edison Esq

Cala. New York or some other part of the U. S.

Sir.

There is a little rooster by the name of McGowan down here who claims to have once been in your employ. Our postal authorities in this city are loud in their complaints at the pertinacity with which this man maintains that by every arriving mail he ought to be in receipt of letters from you. It is hinted around here that this McGowan is a genuine counterfeit & as there is a prospect of his becoming a burden on our community we desire to know, in order to give the fellow a chance & not prejudge too prematurely, whether you ever employed such a being & if so what led to your discarding him? He seems to display some cunning in his talk because on hearing of our intention to investigate his claims he was loud in positive assurances that no notice whatever would be taken of our missive & that we might as well write to a figure of adamant. We however regard this as a subterfuge & do not intend to be thwarted in our endeavor to unmask this mans villany. So far he has not taken any of our citizens into camp in the way of borrowing &c but our authorities are on the alert & have him under keen surveillance. We would make up a small sum to send [illegible] up North but he says he can earn his way from Yuma [illegible] ego to Baffins Bay. He still lingers the delusion that [illegible] ll get remember having sent him away somewhere [illegible] rooms ago but that you lost sum of him & had neglected [illegible] e a tracer sent out after him to know in what

[FROM FRANK MCGOWAN?]

depot he had been dumped.

On receipt of your reply, we find that you have been falsely represented we will take good care to rid our city of this pretender. Of course it is all nonsense to suppose that you with such a well disciplined staff of workers would neglect writing for a long months to any of your employees at a distance & we look upon this man as a correct fraud.

As we said before in order not to judge too hastily we will feel favored if you will order one of your Secretaries to answer this any time before the year 1890. Should such society be in need of a small remittance for any labored effort of his in this direction let him send us down his bill & we will cheerfully try to keep the wolf from his door.

Some of the Law Abiding Citizens of Cali

AC – DC.

EDISON ELECTRIC LIGHT CO.

16 & 18 BROAD STREET,

New York, Jan. 21st, 1889.

My dear Mr. Edison:-

Mr. Brown's circular regarding the danger of alternating currents, which includes a copy of the Medico-Legal Society's report has been sent to the Mayors, members of city Governments, Insurance men and principle business men in every city and town of over 5,000 inhabitants in the United States.

As a result, every mail brings him a pile of letters from all over the country asking for all sorts of information and advice. These enquiries are followed up and in two or three different towns he has been requested by the Mayor to visit them and make an examination of the existing plants, take electrical measurements with a view to determining leakage &c. and generally advise them in regard to the danger &c. He will of course accept these invitations, and he has all the instruments necessary excepting a Photometer to measure arc lights. He tells me that you have such an instrument and wants to know if you could spare it for a short time. I know that you will recognize the importance of this and if you cannot spare the apparatus which you have, can you advise me where to go to get one?

Yours very truly,

Secty & Treas.

To T. A. Edison, Esq.
Orange, N. J.

H. WARD LEONARD. lamps

W. B ANDREWS.

E. M. IZARD.

LEONARD & IZARD,

INCANDESCENT ELECTRIC LIGHT PLANTS.
ARC LIGHT PLANTS.
ELECTRIC STREET RAILWAYS.
ELECTRIC TRANSMISSION OF POWER.

Consulting and Contracting Electrical Engineers.

STORAGE BATTERY PLANTS.
ELECTRIC LIGHT WIRING.
HIGH ECONOMY STEAM TRACTION.
UTILIZATION OF EXISTING WATER POWERS.

THE ROOKERY, CHICAGO,
ROOM 426. TELEPHONE 924.

bic. by H.W.L.

LUMBER EXCHANGE, MINNEAPOLIS,
ROOMS 5 AND 6.

Subject .....

Address reply to .....

Chicago, Jan. 23rd., 1889

Mr. Thomas A. Edison,

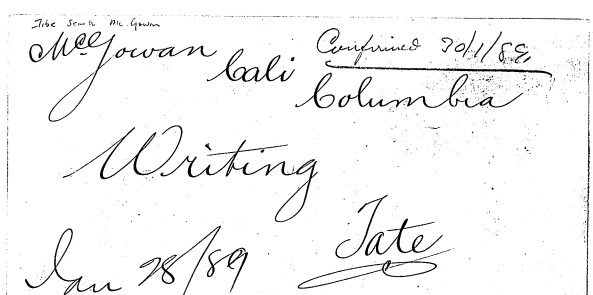
Orange, N.J.

Dear Sir:--

Am pleased to be able to report that our lamps in the life test our making much better showing than they have up to this date. The drop in candle power seems to have stopped, we learn informally from the expert conducting the test. Will give you positive information in the course of a few days.

Yours very truly,

H. Ward Leonard


Jobe Sonia Mc Gowan
Mrs Jowan Cali
Confirmed 20/1/88
Columbia
Writing
Jan 28/89
Jate

H. WARD LEONARD Samples W. B. ANDREWS. C. H. IZARD.

LEONARD & IZARD,

INCANDESCENT ELECTRIC LIGHT PLANTS.
ARC LIGHT PLANTS.
ELECTRIC STREET RAILWAYS.
ELECTRIC TRANSMISSION OF POWER.

Consulting and Contracting Electrical Engineers.

STORAGE BATTERY PLANTS.
ELECTRIC LIGHT WIRING.
HIGH ECONOMY STEAM PLANTS.
UTILIZATION OF EXISTING WATER POWERS.

THE ROOKERY, CHICAGO. Dic. by H.W.L. LUMBER EXCHANGE, MINNEAPOLIS.
ROOM 426. TELEPHONE 894. ROOMS 8 AND 9.

Subject .....

Address reply to .....

Chicago, Jan. 29 tha., 1889

Mr. Thomas A. Edison,

Orange, N.J.

Ans. 5/2/89

Dear Sir:--

Beg to submit the following tabulated data regarding the condition of the life test being made by the C. B. & Q. Ry. Co.

Yours very truly,

H. Ward Leonard

[ENCLOSURE]

Lamps

Lamp Life Test, C. B. & Q. Ry. Co.

Jan.28 th.,1889.

Make		New	55 hrs.	115 hrs.	200 hrs.	No.of Lps. at beginning.	Breakage after 200 hrs.
Edison (110) 1 st. lot	C.P.	15.2	12.7	12.5	10.9	15	2
	C.H.P.	211	178	176	155		
Edison (100) 2 nd. lot	C. P.	15.8	13.2	12.7	10.8	15	2
	C.H.P.	226	199	192	166		
United States 1 st.lot (110)	C. P.	22.1	20.8	18.1	14.2	15	0
	C.H.P.	221	204	180	143		
U. S. (108) 2 nd. lot	C. P.	14.8	15.6	13.2		10	0
	C.H.P.	172	176	152			
Sawyer-Mann (107)	C. P.	22.2	22.9	22.0	18.4	15	1
	C.H.P.	207	213	204	175		
Perkins (110) 1 st. lot	C. P.	11.7	13.7	13.7	12.4	15	1
	C.H.P.	160	181	182	164		
Perkins (110) 2 nd. lot	New lot of 15 just rec'd. direct from factory						

Lamps

H. WARD LEONARD. W. B. ANDREWS. E. M. IZARD.

LEONARD & IZARD,

INCANDESCENT ELECTRIC LIGHT PLANTS.
ARC LIGHT PLANTS.
ELECTRIC STREET RAILWAYS.
ELECTRIC POWER TRANSMISSION.
STORAGE BATTERY PLANTS.
ELECTRIC LIGHT WIRING.
HIGH ECONOMY STEAM PLANTS.
UTILIZATION OF EXISTING WATER POWERS.

Consulting and Contracting Electrical Engineers.

GENERAL AGENTS.
EDISON UNITED MFG. CO.
EDISON LIGHT AND POWER CO., OF Minneapolis.
EDISON LIGHT AND POWER CO., OF St. Paul.
CHICAGO EDISON CO.

THE ROOKERY, CHICAGO, ROOM 428. TELEPHONE 924.

Dic. by H.W.L.

LUMBER EXCHANGE, MINNEAPOLIS. ROOMS 5 AND 6.

Subject .....

Address reply to .....

Chicago, Feb. 2 nd., 1889

Mr. Thomas A. Edison,

Orange, N.J.

Dear Sir:--

Mr. Upton has given me the batch of lamps which you sent out, and I shall endeavor to get them entered in the test at the C. B. & Q. Mr. Upton suggests operating them at about 320 candles per electrical horse power. I will endeavor to place them in this way unless you have some other desire. Mr. Pierce, the expert who is conducting the test, is thinking of making microscopical examination of the filaments of the various lamps, new and old. I told him I thought a good deal of work had been done in this line, but that I would find out from you in regard to the matter and learn whether it would be likely to lead to interesting results. Will you kindly let me know what has been done in this line, and what the prospect is of learning anything thereby?

Yours very truly,

~~Leonard & Izard.~~

per H. Ward Leonard

THE

Filed 1884

Camp July 8. 1884

My dear Sir I enclose my check for Eleven 76/100 Dollars, balance of $1 July. Please send me a Receipted Bill from Mr Adrian (since it appears that he has done the work) as per enclosed memd. And I will return a proper voucher for rented Cottage.

Yours truly

Henry B Anthony

W. A. O. Date

Chicago Office.
ROOM 14 TRIBUNE BUILDING.
Boston Office.
ROOM 58, 178 DEVONSHIRE ST.

ELECTRICAL REVIEW

WEEKLY ELECTRICAL JOURNAL OF THE UNITED STATES.

Geo. Worthington, EDITOR.
Charles W. Price, ASSOCIATE EDITOR.
T. J. McTighe, ELECTRICIAN AND MANAGER PATENT BUREAU.

Address all communications to ELECTRICAL REVIEW, P.O. BOX, 3325.

Second floor 13 PARK ROW Rooms 22 to 26

Cable Address. "ELECTVIEW."

New York, Feb. 12th, 1889

T. A. Edison, Esq.,
Orange, N.J.

Ch! Kennelly

Dear Sir:

I am in receipt of your favor of the 11th inst., and while I have the utmost respect for Mr. Kennelly's opinion, circumstances have forced me to a contrary opinion on this particular matter of conversion by condensers, and the circumstances have been that I have myself witnessed the reduction in accordance with one of the patents examined by Mr. Kennelly of a potential of 1000 volts down to less than 50 volts, and the lighting of incandescent lamps by the induced current which apparently was as steady as the usual alternating currents used for lighting.

Mr. Kennelly's assertion that the invention has no basis in theory or practice serves to demonstrate the complete novelty of the invention.

Yours truly,

Geo. Worthington

Arc Lights

Feb. 14, 1889.

Mr. Thos. A. Edison,

Orange, N. J.

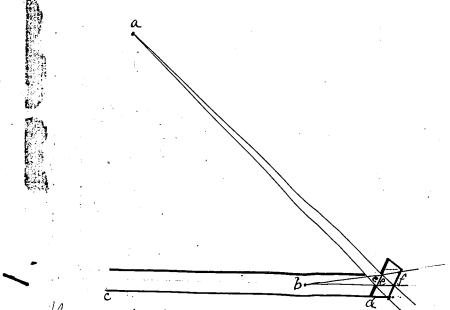
My Dear Mr. Edison, I have frequent occasion to test arc lights in behalf of city authorities who have contracted for them as lights of 2,000 candle power, and these are not always satisfied with measurements of the volts and amperes of the current. As I always leave the mayor and council pledged to an ordinance prohibiting the alternating current at higher E. M. F. than 300 volts, I trust you will pardon my addressing you concerning the practicability of a photometer for getting merely approximate measurements from the lamps as they appear in service. The only feature of novelty is that a pane of colored glass is set at an angle midway between the angles of light rays received from both sources; parallel with this is a sheet of ground glass, one half of which is illuminated from each source. As the lights are then of the same color, the distance of the standard light can be varied until the line of demarcation between the halves is lost. By setting the bottom "cd" level and arranging the apertures so that angle "bfa" must be of say 45 degrees (for "long arc" lamps) in order that the light from a shall strike the screen "f," the length of "bf" may of course be

determined by measuring the base of the triangle. I do not know whether the color in the glass "e" will have a varying effect upon the light from the two different sources and, if so, what the variation would be. It will add greatly to my obligations to you if you can see that I am set right in the matter, and will indicate some candle or portable lamp to be used as a standard.

Sincerely Yours, Harold P. Brown.

Sketch inclosed.

[ENCLOSURE]



Photometer for outdoor use.
a, light to be measured.
b, standard light movable on graduate scale, c d.
e, colored glass set midway between angles of light rays
f, receiving from both sources.
g, ground glass set at same angle and viewed from g.

THE WESTINGHOUSE ELECTRIC COMPANY,

PITTSBURGH, PA.

LIST OF CENTRAL STATIONS,

(ALTERNATE CURRENT SYSTEM.)

This list comprises Central Stations only, and does not include any isolated plant.

List No. 9,
February 15th, 1890.

Total Number of Stations, ... 142.
Total generating capacity on 16 C. P. Lamp basis, 269,300.
" " " " 10 " " " 430,720.

LOCATION.	NUMBER OF 16 C. P. LAMPS.	OPERATING COMPANY.
74 Albany, N. Y.	1300	The Albany Electric Illuminating Co.
26 Allegheny City, Pa.	1300	Allegheny County Light Co.
" " "	1st increase, 1300	" " " "
" " "	2d " 2500	" " " "
" " "	3d " 2500	" " " "
69 Altoona, Pa.	650	Mountain City Electric Light, Heat & Power Co.
136 Annapolis, Md.	2250	Annapolis Electric Light Co.
78 Aspen, Col.	650	Roaring Fork Electric Light & Power Co.
64 Aurora, Ills.	650	Aurora Electric Light & Power Co.
38 Austin, Tex.	5200	Austin Water, Light & Power Co.
76 Baltimore, Md.	5000	The Brush Electric Co., of Baltimore City, Md.
44 Bath, Me.	650	Bath Electric Light & Power Co.
" " "	1st increase, 650	" " " "
126 Beatrice, Neb.	750	Beatrice Electric Light Co.
119 Beaver Falls, Pa.	650	Beaver Valley Electric Light & Power Co.
21 Beaver Dam, Wis.	650	Beaver Dam Electric Light Co.
" " "	1st increase, 650	" " " "
43 Bennington, Vt.	650	Bennington Electric Light & Power Co.
104 Black Hawk, Col.	400	Stearns, Roger & Co.
124 Binghamton, N. Y.	2250	Binghamton Gas & Electric Co.
138 Booneville, Mo.	750	Booneville Electric Light & Power Co.
71 Braddock, Pa.	650	Citizens Electric Light Co.
121 Bristol, Pa.	500	The Bristol Electric Light & Power Co.
" " "	1st increase, 500	" " " " "
17 Buffalo, N. Y.	650	Buffalo Electric Light & Power Co.
" " "	1st increase, 650	" " " "
" " "	2d " 650	" " " "
" " "	3d " 1300	" " " "
73 Buffalo, Wyo. Ter.	650	Geo. T. Beck.
128 Burlington, Vt.	500	Burlington Gas Light Co.
2 Carbondale, Pa.	1000	Electric Light, Heat & Power Co.
" " "	1st increase, 500	" " " " "
53 Cedar Rapids, Ia.	1950	Cedar Rapids Electric Light & Power Co.
27 Charleston, W. Va.	650	Kanawha Electric Light Co.
37 Chattanooga, Tenn.	650	Chattanooga Electric Light Co.
" " "	1st increase, 1300	" " " "
102 Chicago, Ills.	1500	Consumers Electric Light Co.
120 Clinton, Ill.	650	The Clinton Electric Light, Heat & Power Co.
31 Colorado Springs, Col.	1300	El Paso Electric Co.
" " "	1st increase, 650	" " "
" " "	2d increase, 750	" " "
84 Columbia, Ohio,	2600	Columbia Gas Light & Coke Co.
55 Conshohocken, Pa.	650	Conshohocken Electric Light & Power Co.
" " "	1st increase, 650	" " " "
35 Cornwall, Ont.	650	Stormont Electric Light & Power Co.
" " "	1st increase, 650	" " " "
140 Council Bluffs, Iowa,	2250	Electric Light & Power Co. of Council Bluffs.
32 Denver, Col.	6500	Denver Light, Heat & Power Co.
" " "	1st increase, 1300	" " " "
" " "	2d increase, 1300	" " " "
111 Downingtown, Pa.	400	H. B. McFarlan.
68 Duluth, Minn.	1300	Duluth Electric Light & Power Co.
12 Easton, Md.	650	Easton Electric Light Co.
90 Eau Claire, Wis.	650	Eau Claire Electric Light & Power Co.
" " "	1st increase, 650	" " " " "
65 Elizabeth, N. J.	650	Elizabeth Electric Light, Heat & Power Co.
98 Englewood, Ills.	750	Englewood Electric Light Co.
113 Evansville, Ind.	1300	Evansville Gas and Electric Light Co.
41 Flint, Mich.	650	Peoples Electric Light & Power Co.
56 Fort Edward, N. Y.	650	Ft. Edward Electric Light & Power Co., Limited.
9 Fort Worth, Tex.	1950	Ft. Worth Electric Light Co.
130 Fremont, Neb.	750	Fremont Gas and Electric Light Co.
105 Gainesville, Tex.	650	Gainesville Light & Fuel Co.
60 Galveston, Tex.	650	Brush Electric Light & Power Co.
1st increase,	650	" " " "

LOCATION.	NUMBER OF 16 C. P. LAMPS.	OPERATING COMPANY.
1 Greensburg, Pa.	600	The Peoples Electric Light Co.
117 Hagerstown, Md.	1300	Hagerstown Electric Co.
46 Halifax, N. S.	650	Chandler Electric Co., Limited.
" "	1st increase, 750	" " " "
122 Hamilton, Ont.	500	Hamilton Electric Light Co.
8 Hartford, Conn.	650	Hartford Light & Power Co.
" "	1st increase, 650	" " " "
" "	2d " 1300	" " " "
" "	3d " 650	" " " "
132 Havana, Cuba,	1500	Spanish-American Light and Power Co.
141 Haywards, Cal.,	500	S. D. Ingram.
51 Hillsdale, Mich.	650	Hillsdale Electric Light Co.
72 Hoboken, N. J.	1300	Hudson Electric Light Co.
106 Hoosac Falls, N. Y.	1300	Hoosac Falls Electric Light Co.
61 Hot Springs, Ark.	650	Hot Springs Electric Light Co.
77 Houston, Tex.	650	The Houston Electric Light & Power Co., of 1887
114 Joliet, Ills.	650	Joliet Electric Light Co.
131 Juiz de Fora, Brazil, S. A.	1500	
47 Junction City, Kan.	650	Junction City Electric Light Co.
137 Kansas City, Mo.,	3000	The Sperry Associate Electric Co.
63 Kingston, Ont.	650	Kingston Electric Light Co., Limited.
40 Lincoln, Neb.	1950	Lincoln Electric Light Co.
97 Little Rock, Ark.	650	Little Rock Electric Light Co.
" "	1st increase, 650	" " " "
30 Littleton, N. H.	650	Littleton Water & Electric Light Co.
142 London, England,	10000	The Metropolitan Electric Supply Co., Limited.
109 Mansfield, Ohio	650	Richland Electric Light & Power Co.
105 Maquoketa, Iowa.	400	Barnes Brothers.
" "	1st increase, 250	" "
80 Marshall, Tex.	650	Phœnix Electric Light & Power Co.
99 Mendota, Ills.	650	Mendota Electric Light Co.
36 Minneapolis, Minn.	6500	Minneapolis Electric Light Co.
116 Montgomery, Ala.	1300	Brush Electric Light & Power Co.
33 Morristown, N. J.	650	Morristown Electric Light, Heat & Power Co.
" "	1st increase, 650	" " " " " "
39 Nashville, Tenn.	650	Nashville Lighting & Power Co.
" "	1st increase, 650	" " " "
" "	2d increase, 750	" " " "
85 Newark, Ohio,	650	Newark Electric Light & Power Co.
79 New Bedford, Mass.	1300	New Bedford Gas Light Co.
" "	1st increase, 650	" " " "
" "	2d " 650	" " " "
57 New London, Conn.	1300	New London Electric Light Co.
7 New Orleans, La.	1300	Louisiana Electric Light & Power Co.
" "	1st increase, 1300	" " " "
" "	2d " 2600	" " " "
" "	3d " 1300	" " " "
130 New York, N. Y.,	10000	The Mt. Morris Electric Light & Power Co.
110 Norwich, N. Y.	650	Norwich Light & Power Co.
91 Oakland, Cal.	1300	Oakland Gas Light & Heat Co.
83 Olean, N. Y.	650	Olean Electric Light & Power Co.
58 Oneonta, N. Y.	650	Oneonta Electric Light & Power Co.
20 Ouray, Col.	650	Ouray Electric Light & Power Co.
115 Paducah, Ky.	400	Paducah Gas Light Co.
87 Palmer, Mass.	650	Palmer Electric Co.
19 Parkersburg, W. Va.	1300	Parkersburg Electric Light & Power Co.
" "	1st increase, 650	" " " "
92 Passaic, N. J.	650	Passaic Electric Light, Heat & Power Co.
42 Peekskill, N. Y.	1300	Peekskill Electric Light & Power Co.
18 Philadelphia, Pa.	1950	Keystone Light & Power Co.
108 Pine Bluff, Ark.	1300	Pine Bluff Water & Light Co.
11 Pittsfield, Mass.	1300	The Pittsfield Illuminating Co.
" "	1st increase, 650	" " " "
" "	2d " 650	" " " "
9 Pittsburgh, Pa.	1300	Allegheny County Light Co.
" "	1st increase, 1300	" " " "
" "	2d " 1300	" " " "
" "	3d " 1300	" " " "
" "	4th " 1300	" " " "
" "	5th " 1300	" " " "
" "	6th " 2600	" " " "
" "	7th " 2600	" " " "
" "	8th " 2600	" " " "
62 Pittsburgh, (East End.)	1300	East End Electric Light Co.
" "	1st increase, 2600	" " " "
" "	2d " 200	" " " "
" "	3d " 2350	" " " "
" "	4th " 1500	" " " "

LOCATION.	NUMBER OF 16 C. P. LAMPS.	OPERATING COMPANY.
89 Pittston, Pa.	1500	Citizens Electric Illuminating Co.
15 Plainfield, N. J.	2600	The Plainfield Electric Light Co.
" "	1st increase, 1300	" " " " "
129 Plattsburg, N. Y.	750	Plattsburg Electric Co.
45 Port Huron, Mich.	650	Excelsior Electric Co., of Port Huron.
81 Port Jervis, N. Y.	650	The Deer Park Electric Light Co.
14 Portland, Me.	650	Consolidated Electric Light Co.
134 Portland, Ore.,	3000	Willamette Falls Electric Co.
118 Providence, R. I.	2000	The Narragansett Electric Lighting Co.
107 Pueblo, Col.	1300	The Pueblo Light, Heat & Power Co.
" "	1st increase, 750	" " " " "
112 Red Cloud, Neb.	650	Red Cloud Electric Light Co.
124 Red Wing, Minn.	750	Red Wing Gas & Electric Co.
83 Richfield Springs, N. Y.	650	Richfield Springs Electric Light & Power Co.
22 Richmond, Va.	650	The Virginia Electric Light & Power Co.
" "	1st increase, 1300	" " " " "
" "	2d " 5000	" " " " " "
127 Salem, N. J.	500	Salem Electric Light Co.
70 Salem, Ohio.	650	Salem Electric Light & Power Co.
" "	1st increase, 650	" " " "
52 Salina, Kan.	650	Salina Gas & Electric Light Co.
54 San Antonio, Tex.	650	Electric Light & Power Co.
95 San Bernardino, Cal.	1300	The Electric Light & Power Co., of San Bernardino.
96 San Diego, Cal.	1300	Geo. D. Copeland.
75 Sandusky, Ohio.	1300	Sandusky Electric Light, Fuel-Gas & Supply Co.
10 Savannah, Ga.	650	Brush Electric Light & Power Co.
" "	1st increase, 650	" " " " "
" "	2d " 650	" " " " "
" "	3d " 650	" " " " "
16 Schenectady, N. Y.	2600	Westinghouse Illuminating Co.
59 Seward, Neb.	650	Seward Electric Light & Power Co.
13 Sheffield, Ala.	650	Sheffield Electric Light Works.
" "	1st increase, 750	" " " " "
82 Shreveport, La.	650	The Shreveport Incandescent Electric Light Co.
93 Sing Sing, N. Y.	1300	Sing Sing Electric Light Co.
86 Sioux City, Iowa.	650	Sioux City Electric Co.
135 Skowhegan, Me.,	500	Weston & Bigelow.
24 Springfield, Mass.	1300	United Electric Light Co.
" "	1st increase, 650	" " " "
50 Springfield, Ohio.	1950	Champion Electric Light Co.
35 Stapleton, N. Y.	650	Richmond Light, Heat & Power Co., Limited.
" "	1st increase, 650	" " " " " " "
" "	2nd " 650	" " " " " " "
" "	3d " 1300	" " " " " " "
" "	4th " 1300	" " " " " " "
34 Steubenville, Ohio.	650	Electric Light & Power Co.
" "	1st increase, 1300	" " " " "
60 Stillwater, Minn.	650	Stillwater Gas & Electric Light Co.
48 St. Cloud, Minn.	650	The St. Cloud Gas & Electric Co.
23 St. Louis, Mo.	12000	The Missouri Electric Light & Power Co.
66 St. Paul, Minn.	2600	St. Paul Gas Light Co.
" " "	1st increase, 1500	" " "
4 Tampa, Fla.	650	Tampa Electric Light & Power Co.
6 Torrington, Conn.	650	The Torrington Electric Light Co.
" " "	1st increase, 650	" " " "
28 Trenton, N. J.	3250	Peoples Electric Light Co.
" "	1st increase, 650	" " " "
133 Toronto, Ont.	3000	Consumers Gas Co.
100 Troy, N. Y.	1300	Troy Electric Light Co.
67 Tyler, Tex.	650	Tyler Electric Light & Power Co.
" "	1st increase, 650	" " " "
3 Tyrone, Pa.	500	Home Electric Light & Steam Heating Co.
" " "	1st increase, 650	" " " " "
125 Washington, Pa.	500	Washington Electric Light & Power Co.
101 Weyers Cave, Va.	650	The Grottoes of the Shenandoah.
5 Wheeling, W. Va.	650	The Wheeling Electrical Co.
" "	1st increase, 650	" " " "
" "	2d " 650	" " " "
49 York, Pa.	650	York Electric Co.

Substitution
Troy, N.Y. Trenton, N.J.
145 Jeannette, Penn. 750
750

146	Albert Tracy	500	
147	Horatio Ross	3000	
148	Frank Norfolk Rich	750	
149			
150		Additional Increase.	
151			
152	Capt Jacob Pittsburgh	1500	
153	Hon Bedford Mass	850	
154	Springfield, Mass.	2250	
155	Providence, R. I.	2250	

[PHOTOCOPY]

ASHINGTON AND LEE UNIVERSITY
LEXINGTON, VIRGINIA

Harold P. Brown [illegible] correspondence with Thomas Edison; Edison Electric Light Co. and A. E. Kennelly

Kennelly

XXII.

EDISON ELECTRIC LIGHT CO.
EXECUTIVE OFFICES, NEW YORK, May 18, '88.

A. E. Kennelly, Esq.

My Dear Sir: Not the work here yesterday. I could see a chance. Please send by express.

Yours truly, H. P. BROWN.

(Note.—Lead coil burnt in Brown's room.)

XXVIII.

EDISON ELECTRIC LIGHT CO.
65 FIFTH AVE., NEW YORK, June 20, 1888.

H. P. B., Esq., Goodyear's House, Buffalo, N. Y.

My Dear Mr. Brown: Yours of 19th was received to-day. I enclose herewith a copy of Mr. Edison's letter to Mr. Hughes, which explains in your account of the trial and also other matters contained in your letter. Shall hope to see you next week. Yours in a hurry,

F. S. HASTINGS, Sec. and Treas., S.

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F. S. HASTINGS, Sec. and Treas., S.

VIII.

MARCH 17, 1888.

My Dear Mr. Edison: Kelly has a month. I visited Scranton as an expert for the city to determine whether the arc lights were up to the guarantee, specifications, and performance among other things. I overheard private talk, and as a result of my report I was employed for my recommendations. I found that the Brush local company were preparing to put in an alternating system, and, therefore, have said since I was employed that I would not allow an ordinance prohibiting their current as a higher pressure than 500 volts. Of course they have raised a great outcry, and are attacking me in the papers, and I am in a hot fight. If you can possibly help me in any point, two which I can show to Harry Hinds, shall be able to add thereto to the list of cities which have shut out the high-tension alternating current. The Brush people have got Mr. Hastings, the local Edison manager, the telephone and telegraph superintendents, and the Scranton political people have approved my recommendations. The Brush people have set their heads on getting in the execution-er's current. Sincerely yours,

HAROLD P. BROWN.

IX.

CABLE ADDRESS, "EDISON, NEW YORK."
FROM THE LABORATORY OF THOS. A. EDISON,
ORANGE, N. J., March 22, 1888.

Subject.
Harold P. Brown, Esq., 261 West Fifty-fourth street, New York City.

My Dear Sir: I have your favor of 17th inst., and take much pleasure in enclosing herewith a testimonial, which I trust is ample. I hope will answer your purposes. Yours very truly,

THOS. A. EDISON (per).

XI.

MARCH 27, 1888.

My Dear Mr. Edison: The New York State authorities have authorized me to purchase for them alternating current dynamos made for electric lighting on the "converter" system for the electrical execution plant. To get them it will be necessary to purchase at least one full complement of converters and lamps, the other dynamos to be extras. This will require an investment of $7,000 to $8,000, *until the first execution proves that the plant is suitable for the purpose.* I will then have to take my chances of selling the converters and lamps, as, of course, the State will pay for dynamos only. *The Thomson-Houston Company has authorized me to take up Westinghouse's advertised claim that fifty per cent.* more light for a given expenditure of power (fuel) can be obtained from W. alternating current apparatus and lamps than from any direct current system. I am to challenge him to send a 650-light plant to the electrical testing bureau at Johns Hopkins University, to be matched against the T.-H. direct-current plant for a three months' test, the records to be published, and the loser to buy the other's apparatus at list to present to the university. Of course, Westinghouse will not dare accept, as I wish to have one of the plants bought for the State used for the purpose of a public efficiency test. *I am willing to undertake that the cost of my projects* shall be carried through if $5,000 *is made available for me to use, and it will be done separately by my T.-H. Company. In view of the approaching consolidation, the people at the Board Shrub do not feel like undertaking the matter unless you approve of it. Do you not think that it is worth doing,* as it will enable me, through the Board of Health, to shut off the overhead alternating current circuits in the State, and will, by showing the lack of efficiency of the Westinghouse apparatus, *head off investors, and prick the bubble,* thus helping all legitimate electrical enterprises? A word from you will carry it through, and without it the chance will be lost. Is it not worth while to say the word? Sincerely yours,

HAROLD P. BROWN.

XLV.

JULY 9, 1888.

My Dear Mr. Kennelly: Your kind letter of the 28th was forwarded to me in this out of town, and missed me on account of my returning earlier than anticipated. It reached me last night, and I have since had a long conversation with Mr. Edison, and I am glad to say that progresses. I will only myself in goodness to make the test suggested, or to decline to do before the return. It seems necessary. From what I can learn from Mr. Edison, and also from Mr. Cockran, I judge that he intends to try to show that a galvanometer measurement of a living animal is necessary. He says that the alternating current is not sinusoidal in Ogden's case, and that therefore the figures which I have received in the full power of the alternating current or the lightning without being killed. If the account of galvanometer tests is attached, could you not give in peculiar form a descrip-tion of the way in which the current in the bleeding broken [illegible] Cockran is accurately not satisfied with any evidence unless the witness has actually done the act testified to. Sincerely yours,

HAROLD P. BROWN.

Thomas P. Hughes
History Department
Washington and Lee Univ.
Lexington, Virginia

Bomba Search Mr. Gowan

Mr. Gowan Cali Columbia

Come home

Tate

12:30 PM

Feb 21/89

Orange Feb 21/89.

T. A. Edison Esq

Dear Sir

I am interested in an Electric Light & Power plant at Boonton N.J. where we control a water power of from 10 to 20 thousand horse power at all seasons. We wish to extend our operations & transmit power to Morristown Paterson & Newark if it is feasible. Do have you got any means of transmitting our power underground to these places? The Faraute people claim to have a system that will accomplish it but we would rather hear from you before going further.

I'd called today but Cannot get an interview please

reply by mail as I do not
Care to try again to
pierce the Chinese wall
which seems to surround
you.

Answer personally to oblige

Yours

J. E. Browne
205 Broad St
Elizabeth
N.J.

P.S. This enterprise will
be a very large one & the
means is at hand (if possible).

J.E.B.

Lamps

H. WARD LEONARD. W. B. ANDREWS. C. H. IZARD.

LEONARD & IZARD,

INCANDESCENT ELECTRIC LIGHT PLANTS.
ARC LIGHT PLANTS.
ELECTRIC STREET RAILWAYS.
ELECTRIC TRANSMISSION OF POWER.
STORAGE BATTERY PLANTS.
ELECTRIC MOTORS FOR USE WITH HIGH HEADWAY STEAM PLANTS.
UTILIZATION OF EXISTING WATER POWERS.

Consulting and Contracting Electrical Engineers.

GENERAL AGENTS.
EDISON UNITED MFG. CO.
EDISON LIGHT AND POWER CO. OF MILWAUKEE.
EDISON LIGHT AND POWER CO. OF ST. PAUL.
CHICAGO EDISON CO.

THE ROOKERY, CHICAGO, ROOM 425. TELEPHONE 894. Dic. by H.W.L. " LUMBER EXCHANGE, MINNEAPOLIS. ROOMS 5 AND 6.

Subject.....

Address reply to.....

Chicago, Feb. 25 th. 1889

Mr. Thomas A. Edison,

Orange, N.J.

Ans. 1/3/89

Dear Sir:--

Enclosed are facts as to the life test at the C. B. & Q. up to a few days since. Six of the special lamps which you sent to us by Mr. Upton were put in service at normal pressure as marked upon the lamp, and the average candles per electrical horse power are 200. At the end of about fifty hours they had fallen off about 5 candles, none had broken and the economy was still higher than the initial economy of the previously entered Edison lamps. Rush of very important business has made it impossible for me to get very definite information for the last few days, but will take an early opportunity to furnish you more exact information. I enclose a pamphlet which occasioned considerable amusement at the National Convention a few days since and which emanates from Freeman. A take-off on the Edison red book was also circulated, Johnson being the subject of attack in that case.

Yours very truly,

1 enclosure.

[ENCLOSURE]

Lamp Life Test, C. B. & Q. Ry. Co.

Feb. 25 th., 1889.

Make.		New	55 hours.	115 hours.	200 hours.	No. of Lps. beginning.	Breakage after 200 Hrs	300 hours.
Edison (110) 1 st. lot	C.P.	15.2	12.7	12.5	10.9	15	2	10.5
	C.H.P.	211	178	176	155			150
Edison (100) 2 nd. lot	C.P.	15.8	13.2	12.7	10.8	15	2	10.2
	C.H.P.	228	199	192	166			158
United States 1 st.lot (110)	C.P.	22.1	20.8	18.1	14.2	15	0	12.7
	C.H.P.	221	204	180	143			129
U. S. (108) 2 nd. lot	C.P.	14.8	15.6	13.2	12.6	10	0	
	C.H.P.	172	176	152	146.5			
Sawyer-Mann (107)	C.P.	22.2	22.9	22.0	18.4	15	1	16.6
	C.H.P.	207	213	204	175			160
Perkins (110) 1 st. lot	C.P.	11.7	13.7	13.7	12.4	15	1	11.4
	C.H.P.	160	181	182	164			151

Electrician

EDISON ELECTRIC LIGHT CO.

16 & 18 BROAD STREET,

New York, Feb. 25th 1889.

My dear Mr. Kennally;-

I enclose herewith copy of a letter which is self-explanatory. Mr. Brown thinks it possible that these gentlemen might like to see one or two animals killed on Wednesday of this week and wants to know whether it would be convenient for you to allow him to conduct the experiments in the Laboratory, as heretofore, in case ~~he~~ find it necessary. Mr. Brown will telegraph you early Wednesday morning if it is necessary to make the experiment, and the bearer of this note will arrange in Orange to have one or two animals in readiness. I regret very much to trouble you again but I am sure that you will recognize the importance of this matter from ~~the~~ the tenor of this letter.

Yours very truly,

Secty & Treas.

A. E. Kennally, Esq.

The Laboratory,

Orange, N. J.

[ENCLOSURE]

STATE OF NEW YORK,
Office of the Superintendent of State Prisons,
ALBANY.

Dictated C. K. B. to F. D.

Feb'y 20, 1889.

Mr. Harold P. Brown,
201 West 54th St.,
New York.

Dear Sir:-

Superintendent Lathrop directs me to say that he and Dr. MacDonald, Warden Brush and myself will be at the Gilsey House New York, Wednesday morning, the 27th inst, to meet you as agreed in his conversation with you yesterday.

He will esteem it a favor if you will notify such other parties as you deem it advisable for him to see. It is his present intention to spend Wednesday and Thursday in looking into the matter of machinery and appliances for executing criminals by electricity. After having informed himself fully he desires to make a contract for the furnishing of these appliances with the guarantee on the part of the party who furnishes that the plant shall perfectly perform its work. Will you kindly inform me here where and at what hour Wednesday morning we can meet you.

Yours respectfully,

[Signed] Charles K. Baker,
Private Secretary.

Electrocution

EDISON ELECTRIC LIGHT CO.

16 & 18 BROAD STREET,

New York, March 8th 1889.

answ by telephone March 11/89

My dear Mr. Edison:-

The Superintendent of States Prisons has asked Mr. Brown to make some experiments for him at the expense of the State, next Tuesday, the 12th inst. I have been trying for the past week to buy, borrow or steal a Westinghouse dynamo but have been unsuccessful. I am afraid therefore that we shall have to trespass again upon your good nature, but the question is whether it would be possible to rewind your Siemens alternating dynamo so that we can get at least 1000 volts? We will of course pay any expense connected with the rewinding of the dynamo but I would like very much to know by telephone tomorrow whether it can be done without causing anyone serious inconvenience?

Yours very sincerely,

Secty & Treas.

To Thomas A. Edison, Esq.

The Laboratory,

Orange, N. J.

Could we get the necessary E. M. F. by speeding up? E.H.

THE WESTERN UNION TELEGRAPH COMPANY.

The Company TRANSMITS and DELIVERS messages only on conditions limiting its liability, which have been assented to by the sender of the following message. Errors can be guarded against only by repeating a message back to the sending station for comparison, and the company will not hold itself liable for errors or delays in transmission or delivery of Unrepeated Messages, beyond the amount of tolls paid thereon, nor in any case where the claim is not presented in writing within sixty days after sending the message.

This is an UNREPEATED MESSAGE, and is delivered by request of the sender, under the conditions named above.

THOS. T. ECKERT, General Manager.

NORVIN GREEN, President.

NUMBER	WORDS	RECEIVED	CHECK
22	11	5.19 PD	

Received at ORANGE, N. J. 1106. March 12 1889

Dated New York 12

To Mrs. E. H. Kennelly
Edith Daly

The committee will be out on the next train

Harold P Brown

THE Friends

Mch 13/89

LAWYERS' CLUB,
EQUITABLE BUILDING,
120 BROADWAY.

Messrs Wm Sato

You paid 72 Mch, with
a/c which perhaps can work
which. I don't know which
an example of ; — but think
this a example of a bill. I
shall be glad to see you
tomorrow at the Laboratory
and have you explain it.

My understanding of the
matter was, that I was to
pay a certain proportion of
the running expenses, stated
as Engineers wages, Coal,
Coke, and stated that proportion
was based on the number of
Lights. I remember Libraries,

the Edison 800, the Brush 250 on yard 100 — in all 650. When the phonograph factory to took so many lights I was congratulating myself that my share would be a mere bagatelle, especially as something was said about the proportion being adjusted according to the distance.

From your remarks it would appear that the rate is onerous to approximate the actual cost according to the lights used at so much an hour equal to 30s as 1 £ 10 p.h. m.

And therefore, that the basis on which you are now calculating is both that of proportion, as stated above, both actual consumption as per meter.

Here is where the puzzle comes in. The quantities given as consumption in July, Aug. & Sept., when my house was shut up, are exactly the same as those for April May & June, when the family and servants were burning the Electric Light for all they were worth. There was a reason for this. The sum total is quite various, my expenses for light for a series of years averaging about £ 17.5 per ann. I cannot say as the amounts exactly

how much, but I have the figures at home.

Please telephone me in the morning, as I should like to see you about this.

The result is not what I expected, but of course it that is my share for each year I shall must be prompt but must devise some way of reducing my consumption in future of that kind of light.

Yours truly

Henry B. Rockwell Esq

HAROLD P. BROWN,
ELECTRICAL ENGINEER,
20 WEST 54TH ST., NEW YORK.
DESIGNS OF APPARATUS FOR SPECIAL PURPOSES.
CONTRACTOR FOR ARC AND INCANDESCENT
ELECTRIC LIGHTS AND STEAM POWER.
LIFE PROTECTING APPARATUS FOR ARC LIGHT DYNAMOS.

March 17, 1888.

My Dear Mr. Edison,

Early last month I visited Scranton as an expert for the city to determine whether the arc lights were up to contract requirements and to formulate means of making their many overhead wires safe. I inclose a copy of my report and have marked my recommendations. I found that the Brush local company were preparing to put in an alternating current system and therefore have laid great stress upon the necessity of adopting an ordinance prohibiting this current at a higher pressure than 300 volts. Of course they have raised a great outcry and are attacking me, endeavoring to discredit my ability. The inclosed letter from Mayor Ripple will explain itself. If you can conscientiously send me a line or two which I can show to Mayor Ripple, I shall be able to add Scranton to the list of cities which have shut out the high tension alternating current which is unsuited for commercial lighting. The local Edison manager, the telephone and telegraph supts., and the Sprague R.R. people have approved my recommendations, but the Brush people have set their hearts upon getting in the executioner's current.

Sincerely Yours, Harold P. Brown.

TAE

Krenzi - 10/4/89

New machine gives fourteen
four tenths watts per pound
Btu good for twenty two

Edison

HAROLD P. [illegible]
ELECTRICAL [illegible]
46 & 47 WALL STREET,
NEW YORK.

DESIGNER OF APPARATUS FOR SPECIAL PURPOSES.
CONTRACTOR FOR ARC AND INCANDESCENT ELECTRIC LIGHTS AND STEAM POWER.
LIFE PROTECTING APPARATUS FOR ARC LIGHT DYNAMOS.

westinghouse

THE PARADOX ARC LAMP;
BURNS IN SERIES OF TWO OR INCANDESCENT CIRCUITS.

CITY STREET LIGHTS TESTED AND COMPARED WITH CONTRACT REQUIREMENTS.

COMPLETE PLANTS ERECTED FOR CITY LIGHTING.

Dear Sir:

As the Westinghouse Electric Co. are making strenuous effoits to introduce their apparatus, and are urging in its favor its ''economy'' as well as its ''safety,'' and As I am frequently consulted on the subject, I felt authorized to address to Mr. Westinghouse, on the 4th of April, a registered letter, a copy of which I enclose, giving him a fair opportunity to have his remarkable claims demonstrated at my expense. The official receipt for the letter has long since reached me, but there has been no reply. You will remember that Mr Westinghouse and his experts pronounced this current ''safe'' and ''harmless,'' and that they have violenty attacked the writer for maintaining and proving that it was dangerous. As a result of my work, the New York State authorities, after a long and thorough investigation, have purchased for electrical execution three Westinghouse alternating current dynamos, built for electric lighting. Having thus proved my point as far as the danger of the apparatus is concerned, I am anxious to have its commercial value definitely settled by the proposed test. I would therefore be glad to receive from you any suggestions concerning methods, or any results of your experience with the alternating current that you may care to place at my disposal. In return I shall take pleasure in sending you copy of report of the tests when completed.

Sincerely Yours
Harold P. Brown

[ENCLOSURE]

HAROLD P. [illegible]
ELECTRICAL
45 & 47 WALL STREET,
NEW YORK.

DESIGNER OF APPARATUS FOR SPECIAL PURPOSES.
CONTRACTOR FOR ARC AND INCANDESCENT ELECTRIC LIGHTS AND STEAM POWER.
LINE PROTECTING APPARATUS FOR ARC AND LIGHT DYNAMOS.

CITY STREET LIGHTS TESTED AND COMPARED WITH CONTRACT REQUIREMENTS.
COMPLETE PLANTS ERECTED FOR CITY LIGHTING.
THE PARADOX ARC LAMP;
BURNS IN SERIES OF TWO OR INCANDESCENT CIRCUITS.

Geo. Westinghouse, Jr.,

President Westinghouse Electric Co., Pittsburgh, Pa.

Dear Sir: The public admission made at Hamilton by Mr. Stillwell, your electrician, that he knew of at least three men killed by the Westinghouse alternating current which you have pronounced safe, and the adoption of the same current by the State of New York for electrical executions, are sufficient reasons for your failure to accept my challenge of Dec. 18, 1888. I then offered to take the continuous current from hand to hand to prove what you deny, if you would take the alternating current at the same pressure and for the same number of seconds. You did not dare to risk your life to prove the sincerity of your statements concerning the safety of the Westinghouse alternating current. Will you now dare to risk your money to substantiate your claims as to the efficiency of the Westinghouse alternating current system?

If so, I hereby give you an opportunity to sell another electric-light station (with 650 lamps of 16-candle power each), and obtain an extensive advertisement at my expense.

You have asserted for many months, both by representations of yourself and agents and by authorized advertisements in electrical and other papers (see enclosed from the Electrical World), that, "50 per cent. more light from a given expenditure of power (fuel) is guaranteed by the Westinghouse Electric Company than can be obtained by any continuous ("direct") current system.

If it is possible to convert force from one form into another and gain 50 per cent. in the operation, your company has made the most wonderful discovery of modern times, which, carried to its logical conclusion, will give us perpetual motion by a series of conversions from high to low tension or the reverse.

To substantiate this remarkable claim, I challenge you to send a complete 650-light Westinghouse alternating-current plant with not less than thirty converters, to the Electrical Testing Bureau of the Johns Hopkins University, to be there installed by your own experts and left

[ENCLOSURE]

for a three-months' test. I will send a plant of the same capacity of the Mather, Schuyler, Jenney or Thomson-Houston continuous-current apparatus.

The electricians of the Bureau shall then determine the efficiency of the dynamos from one lamp only to full capacity by dynamometer; the efficiency and life of lamps and efficiency of converters under full load, half-load, a single lamp on each converter and with secondaries open. The apparatus supplied to be standard commercial make, and burned-out lamps not to be replaced. At the end of the tests the Bureau's reports to be published, and if the Westinghouse alternating system gives 50 per cent. more light from the same expenditure of power, or proves to be that much more economical in running expenses, then I will pay all expenses of tests of both apparatus and will purchase your plant at list price to present to the University.

If your apparatus fails to give 50 per cent. more light from the same expenditure of power, then you are to pay all expenses of the tests of both apparatus, and to purchase the continuous-current apparatus supplied by me at list price and present same to the University.

If you claim that the remarkable advantages of the Westinghouse system are due to the use of the Westinghouse engine, which has so extensive a sale and is so highly recommended by your company, you can use it in the test, and I will arrange to operate against it some one of the standard high-speed, automatic cut-off engines.

If my challenge is accepted each apparatus is to have one expert in attendance, but he is not to be permitted to interfere with the machinery in any way or to take part in any of the tests.

If you fail to accept this challenge within a reasonable time, and are disinclined to have the value of the Westinghouse Electric Company's guarantees publicly established, I shall feel at liberty to personally [redacted] your apparatus to the Bureau for an efficiency test and shall [redacted] their report.

Sincerely Yours,
Rudolph P. Brown

Electrical Engineer,
45 & 47 Wall St.

N. Y., April 4, 1889.

Ans. May 6/89

L. WERTHEIMBER & CO.,

IMPORTERS OF

JAPANESE * AND * CHINESE * PRODUCTS,

Manufactures and Works of Art,

No. 45 BARCLAY STREET,

YOKOHAMA, KOBE, SHANGHAI. LONDON. PARIS.

No 9087

New York, May 2d 1889

Thomas A. Edison Esqr

Llewellyn Park N. J.

Dear Sir

I am reading about Mr Mr Howes search after a certain kind of bamboo, it struck me that perhaps the Japanese bamboo might be a substance that would be of use to you. We are already bought fibrous substances, presenting more resistance to chemical action & any other substance known. I enclose a small sample piece.

Yours obedient servant

Louis Wertheimber

HAROLD P. BROWN,
CTRICAL ENGINEER
1 WEST 64TH ST., NEW YORK.
DESIGNER AND MANUFACTURER FOR SECOND AND ARC LIGHTING
CONSTRUCTION ARC AND INCANDESCENT
EXISTING LIGHTS AND STEAM POWER.
LIFE PROTECTING APPARATUS FOR ARC LIGHT DYNAMOS.

Electrocution

Kennelly

Yes remember I always believed in large static charge loss in alternating as well as [illegible] of [illegible] pressure.

May 13, 1889.

My Dear Mr. Edison,

Thanks to your note to Mr. Johnson I have been able to arrange the matter satisfactorily; have supplied the State with Westinghouse execution dynamos and arranged for a test of the system at Johns Hopkins. For a long time I have felt sure that there was a "condenser action" between the conductors of an alternating current system and the moisture or conductive covering on the outside of the insulation of same, that would constantly tend to discharge to the ground when possible and might draw the current in its path; that it would also result in a loss of energy in an extended system. Dr. Duncan did not at first agree with me but he has come around to my position and the two deaths recorded in inclosed clipping are frightful verifications of my theory. I wish in the Baltimore test to establish at least approximately, what this loss of energy will be and would be glad to have you suggest the best method of doing so. I have known of a series of five 50 volt lamps being run up to c.p. when placed between one terminal of a W. dynamo and the lead covering of an insulated cable attached to the other terminal; also of two men being unable to release themselves after taking hold of two lead covered cables (2,500 volt alt. current) until dynamo was stopped.

Sincerely Yours, Harold P. Brown.

Electrocution

Law Offices

120 Broadway (EQUITABLE BUILDING)

EATON & LEWIS

S.B. EATON
EUGENE H. LEWIS

New York, June 1st, 1889.

Major E. B. Watson,

My dear Major:-

I send you Mr. Yale's letter of the 30th inst., enclosing a letter of inquiry from the Editor of "Notes and Queries" to Mr. Edison.

I think that the words which Mr. Edison suggests, namely, "dynamort", "dynamort" and "electromort" are all open to the same objection, the proposed words to signify the act of execution by electricity. The trouble with them lies in the termination. The termination "mort" does, in fact, mean death, coming from the Latin word, but it carries with it the signification of death only, that is to say, simple, passive death, with no idea involved in it of being put to death. I think the termination of a compound word, coined with the purpose of signifying the idea in question, should properly be taken from a verb, an active verb.

The word "dynamort" is objectionable upon the additional two grounds, first, that it is made up partly of Greek and partly of Latin, dynamis being the Greek for "power" or "force", and "mort" being, as I have said, from the Latin for death; and secondly, that there is no suggestion in it, of death from any particular

kind of force, but only from force. "Dynamort" would express death from any violent cause.

Keeping these conditions in view, I have formed a word from the word electric, (which is the Latin form of the Greek electron, meaning "amber") and the word cado, cadere, meaning "to kill", and I propose the word "electricide" as a word whose nearly signifying "the act of killing by electricity". It has its analogies in our language already, in the words "homicide, "suicide", &c. These words are not deprived of their character as analogies from the fact that in each of them the prefix is the object of the verb, while in the proposed word the verb does not have an expressed object but the prefix represents the means of accomplishing the result.

The above are merely suggestions, however, and I offer them only for your consideration.

There is one other word which I think, under the circumstances, might be used with some propriety. It can be used as a verb and as a noun to express kindred ideas. The word is "westinghouse". As Westinghouse's dynamo is going to be used for the purpose of executing criminals, why not give him the benefit of this fact in the minds of the public, and speak hereafter of a criminal as being "westinghoused", or as being "condemned to be

westinghoused": or, to use the noun, we could say that such and such a man was condemned to the westinghouse. It will be a subtle compliment to the public services of this distinguished man. There is a precedent for it, too, one that could not be more apt or authoritative. We speak of a criminal in France as being guillotined, or condemned to the guillotine. Each time that word is used it tends to perpetuate the memory and services of Dr. Guillotine, who afterwards died by the same machine that he had invented. The adoption of the word westinghouse for a like purpose will go far towards rebutting the claim that Republics are less grateful than Empires.

Yours very truly,

Eugene H. Lewis.

electrocution

Dear Mr. Tate:

Enclosed please find the letter from "American Notes and Queries" about the new word for putting to death by electricity. I have gone into the matter more fully than set forth in Mr. Lewis' recent letter. The Greek word which is the exact equivalent is "electrothanatos", or "electrothanasia". Their precise meaning is death by electricity.

On the whole "electricide" is the best word. There is a Latin word "electrum" derived from the Greek word "elektron". Putting the two Latin words together, to wit, "electrum" and "caedo" to kill, we get "electricide", death by electricity. It seems to me that this is the word most likely to go into popular use.

I have suggested to Mr. Lewis to put a men. in some paper about these words, and possibly he may have an interview in the "Sun" within a day or two.

Very truly yours,

June 6th., 1889.

S.B.Eaton per C.

Electrocution

EDISON GENERAL ELECTRIC CO.

44 WALL STREET,

New York, July 17 1889.

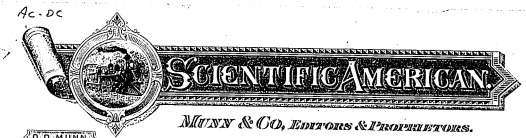
Mr. L. Gisel,

Dear Sir, The Attorney General wishes me to ask you to communicate with Mr. Edison and Mr. Kennelly to ascertain whether they will not be willing to appear before the referee on the Kemmler case for the State, and state whether in their opinion the apparatus supplied to the State for electrical executions can be so applied as to produce certain and painless death. There has been so much absurdity in the testimony of Mr. Westinghouse's witnesses, that Mr. Edison could dispose of by a word. If necessary the commission could come to him instead of the reverse. Mr. Johnson thinks this important. Will you kindly communicate with Mr. Edison and let me know

at 45 & 47 Wall St.

Yours Truly,
Harold P. Brown.

Ac-DC



Ans. Aug 2/89 July 30, 1889.

The Edison Current is

Mr. Thomas A. Edison,

Orange, N. Jersey, a Continuous one

a Transformer used to

Dear Sir;

Could you furnish us with a reply to the enclosed letter, used to heat a wire

and oblige

Yours respectfully, when connected to

Munn & Co

an alternating or

pulsating current

System —

{

dec 5

Ans. Aug 7/89

Chicago Ills July 30th 89

Mr Thos. A Edison

Menlo Park

N.J.

N.J. Ills

Will you kindly inform me what is the best substance to produce an incandescent light from an ultimate heat under atmospheric influence would asbestos answer - any information will be highly appreciated by a brother inventor

Yours very Respt

Wm D Smith

Room 6 - 156 E Washington St

Asbestos might serve

also Platinum and Iridium

Brewster, N. Y. Aug. 15, 1839

Wm. B. Rankine, Esq.,

Dear Sir:-

I respectfully submit to you an estimate specification and a cross-section for the main tunnel, also approximate estimates for one hundred feet of canal cross tunnels &c. with assumed plans for same.

I have given more attention to the tunnel specification than anything else, and think you will find that they cover any and every thing that is likely to happen in constructing the tunnel. Upon consideration of the trouble which might be caused, owing to a lack of items and prices in the specifications, I have made them so as to include masonry and timbering. Of course in the rock at Niagara it is highly improbable that any place in the tunnel will be found which will require permanent supports, but if such should be the case the specifications will cover everything, and as I have given the Engineer the whole power to order such timber and masonry, as he may deem necessary to furnish all plans and to direct the construction of the same, should any bad ground be found the Company will have the entire control.

The prices I have given in the estimate for the tunnel I consider after careful investigation to be very fair, and have no doubt that the contract could be let for much less.

The area of the cross-section for the tunnel corresponds practically with the area of a circle twenty-four feet in diameter and I consider it to have many advantages over a circular section in regard to the construction, and flow of water.

The estimates and plans for the canal cross tunnels &c. are simply approximations, and nothing definite can be arrived at until the Company has in its possession, first. a complete ground plan showing the land, the bottom of the river to a depth of nine feet below the surface of the water, the location of the main tunnel with reference to the original surface, and the boundaries of the land taken by the Company, also, some idea of how far the rock lies below the surface of the ground and water; and, second, a definite plan of the manner in which the Company wish the power developed and distributed, the number of wheel pits and the depth for the wheels.

I would say further that it is with great hesitation that I make any estimates or plans for the Canal, cross tunnels and work connected therewith, owing to a lack of the information I have stated above. The canal shown on the plan, is sufficiently large to admit of vessels and canal boats, and to furnish the ten thousand horse power required under ordinary circumstances, and I

have planned the same as to dimensions and strength of sides so as to admit of shipping facilities.

I am,
Very truly yours,
Albert H. Porter

[ENCLOSURE]

Approximate estimate for canal cross tunnel &c.
700 ft-1000 ft²

Earth excavation for canal per 100 feet	$850.00
Rock " " "	1,200.00
Earth filling, " "	60.00
Side walls, " "	3,400.00
Coping on side walls, "	1,000.00
Excavation of cross tunnel, "	1,700.00
Estimated cost of coffer dam,	6,500.00
Estimated cost of bulkheads	3,000.00
Approximate cost for one wheel pit,	7,000.00
Approximate " of inlet	1,000.00
" " " outlet	300.00
	25,810.00

[ENCLOSURE]

Estimate for one and one-tenth miles of main tunnel.

ITEMS	QUANTITIES	PRICE	AMOUNT	TOTAL
Excavation in open trench	20000 cu.yds	75/100	15,000	
Tunnel excavation	97422 "	$5.50/100	535821	
Shaft Excavation	450 linear ft.	100.	45000	
Estimated allowance for over-haul			5000	
Estimated allowance for masonry at portal and shafts			10000	
				$610821

NOTE: All quantities and dimensions except for tunnel excavation, are merely approximate.

[ENCLOSURE]

APPROXIMATE ESTIMATE

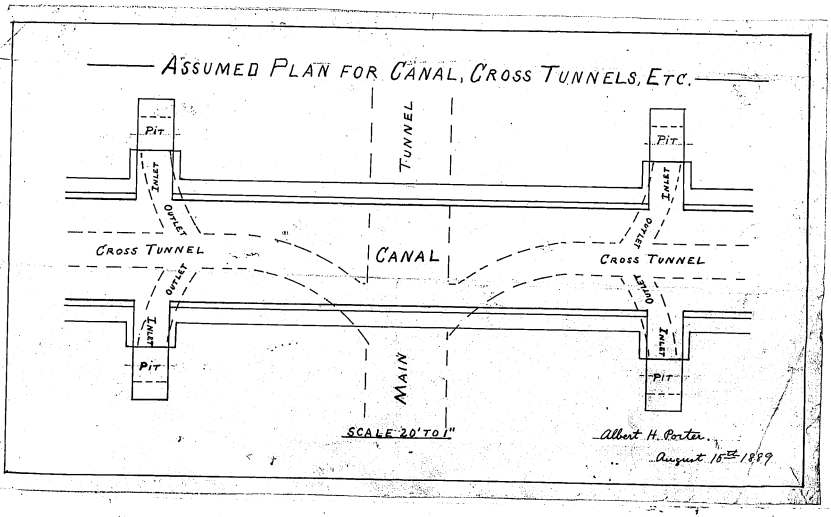
Main Tunnel, Cross Tunnel, Outlets, Wheel pits, Canals etc., for supplying 36000 Horse Power.

Areas & Dimensions	Length	Cu.Ft.	Cu.Yds.	Price	Amount	Totals
Main Tunnel Portal Shafts etc Excavation Open Trench						
72 x 50 =3600	150	540000	20000	$ .75	15000	
Main Tunnel						
24' Diam 452.4	6605	2988102	110670	5.50	608885	
Two Shafts 10 x 20						
300 linear feet a.$100 pr.ft.					30000	
Estimated allowance for overhaul					5000	
Estimated allowance for masonry portal and shafts,					10000	$ 668,885
Cross Tunnel						
17' Diam 227	100	22700	841	6.00	5046	
10'to 17'-152.7	380	58026	2149	6.00	12894	17,940
Outlet from Pits to Cross Tunnel						
8' Diam 50.3	25	1257	46	6.00	276	
Total = 276 x 18 =						4,968
Wheel Pits						
113 Lineal ft.a.$125 per linsal ft.					14125	
Total = 14125 x 18 =						254,250
Walls at Wheel Pits						
5 x 14 70	110	7700	285	8.00	2280	
Total = 2280 x 18 =						41,040

[ENCLOSURE]

Excavation for Inlet Pipes							
18 x 17 = 306		12		3672	136	1.00	136
Total = 136 x 18							2,448
C a n a l Excavation							
70 x 20	1400	600		840000	31111	1.00	31111
Excavation in River, Estimated							
	700	200		140000	5185	4.00	20740
Masonry Walls							
7 x 18 =	126	1240		156240	5787	8.00	46296
Estimated Cost of Masonry at River							5000
Estimated Cost of Coffee dam							8000
Earth Refilling							
18 x 13 = 234		600		140400	5200	.25	1300
Total Cost Canal							124,147
Cost of second Canal							124,147
Total cost of 36000 H.P. without wheels,							$1,237,525

[ENCLOSURE]

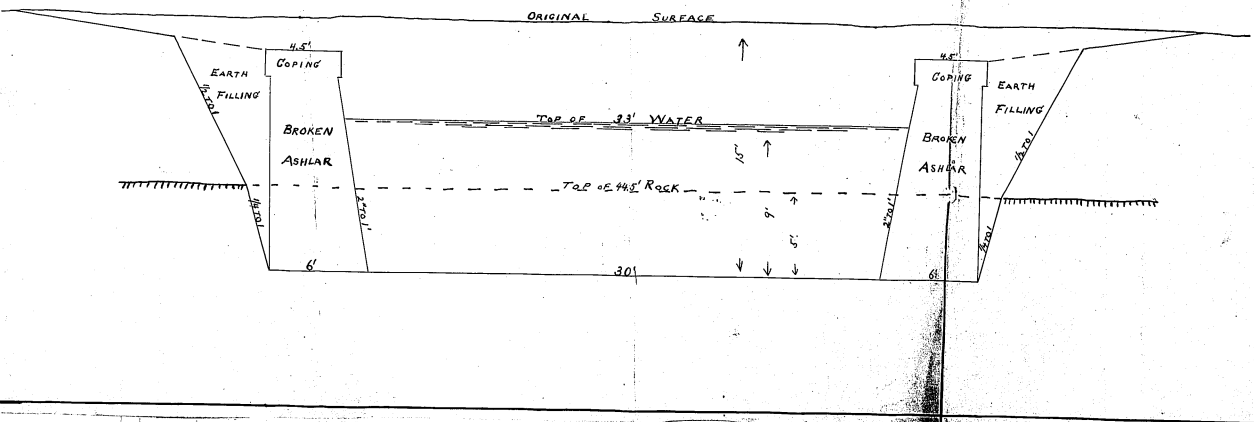

ASSUMED PLAN FOR CANAL, CROSS TUNNELS, ETC.
TUNNEL
PIT
INLET
OUTLET
CROSS TUNNEL
CANAL
MAIN
SCALE 20' TO 1"
Albert H. Porter.
August 15th 1889

Assumed Plan for Canal.

10000. Horse Power.

Scale 4 ft. to 1 in.

Albert H Porter,
August 15th 1887.



Boom boo

Form No. 1.

THE WESTERN UNION TELEGRAPH COMPANY.

This Company TRANSMITS and DELIVERS messages only on conditions limiting its liability, which have been assented to by the sender of the following message. Errors can be guarded against only by repeating a message back to the sending station for comparison, and for a small additional charge the Company will repeat back any message, transmitting the correct message, if an error occurs, to the extent of fifty times the sum paid for sending the message. The Company will not hold itself liable for errors or delays in transmitting or delivering or for non-delivery of Unrepeated Messages, beyond the amount of tolls paid thereon, nor in any case where the claim is not presented in writing within sixty days after the message is filed with the Company for transmission.

This is an UNREPEATED MESSAGE, and is delivered by request of the sender, under the conditions named above.

THOS. T. ECKERT, General Manager. JOSEPH GREEN, President.

NUMBER	SENT BY	RECD BY	TIME	OFFICE
57	Clerk	10 Pd		$1.30

Received at ORANGE, N. J. Aug 30 1887

Dated Bath Beach Aug 30

To C. Bachelor 514

Agnes gone. Aunt will wean the food for seven days

Mac gowan

ENGINEERING DEPARTMENT—AQUEDUCT COMMISSIONERS.

Division No. 6.

Brewster, N. Y., September 3rd 188 9

Wm. B. Rankine Esq.

Dear Sir.

I respectfully submit the following estimate for a canal capable of carrying 10,000 H.P. the plan of which I send you to day.

500 ft of Canal including excavation in River	$40,000.
410 " of Cross Tunnel	7000.
6 Inlets to Wheel Pits.	6000.
6 Outlets from " "	1800.
6 Wheel Pits for 10,000 Horse Power	58.000.
Coffer Dam	6500.
Bulk Heads	3000
Total Estimate =	$122,300.

Very truly yours.

Albert H. Porter.

Wheels for Canal as shown on plan $45.000.

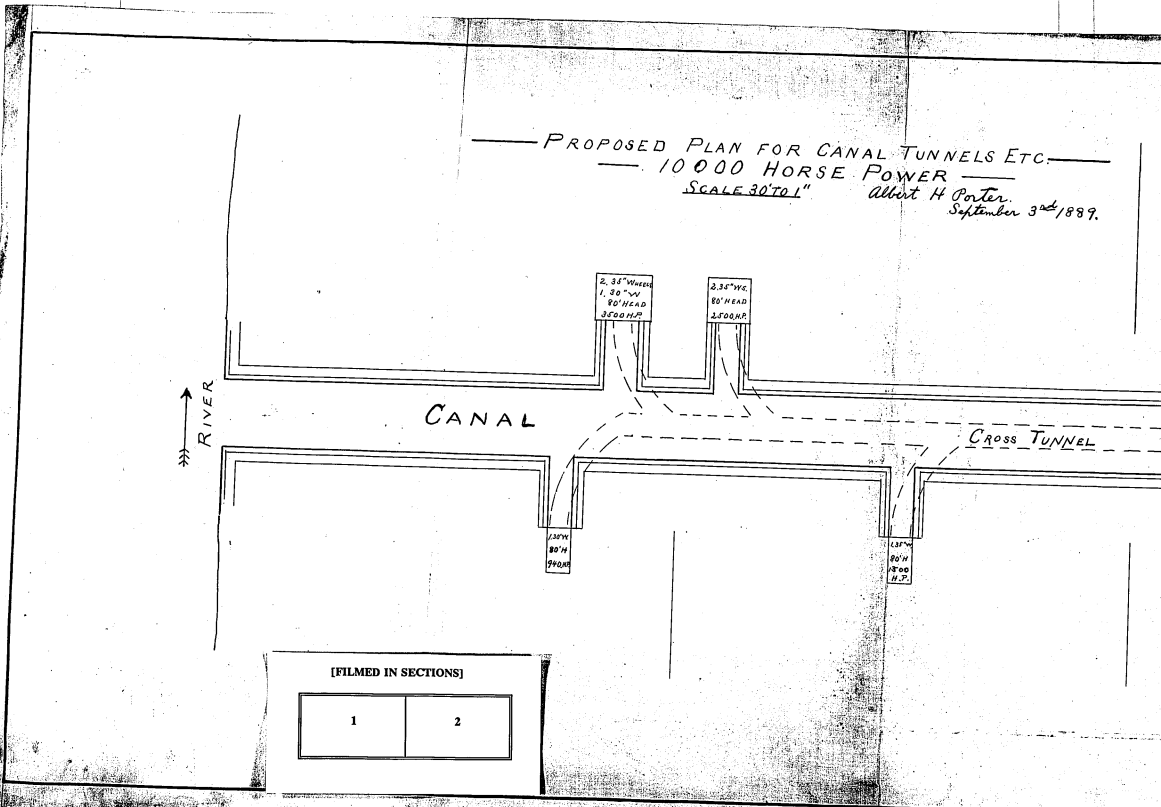
Aug. 5 & Sept. 3, 1859.

Col. Ed. Porter

W. B. Rowland

Giving estimate of specifications for mining
Hannibal claim approximate estimates.

[ENCLOSURE]



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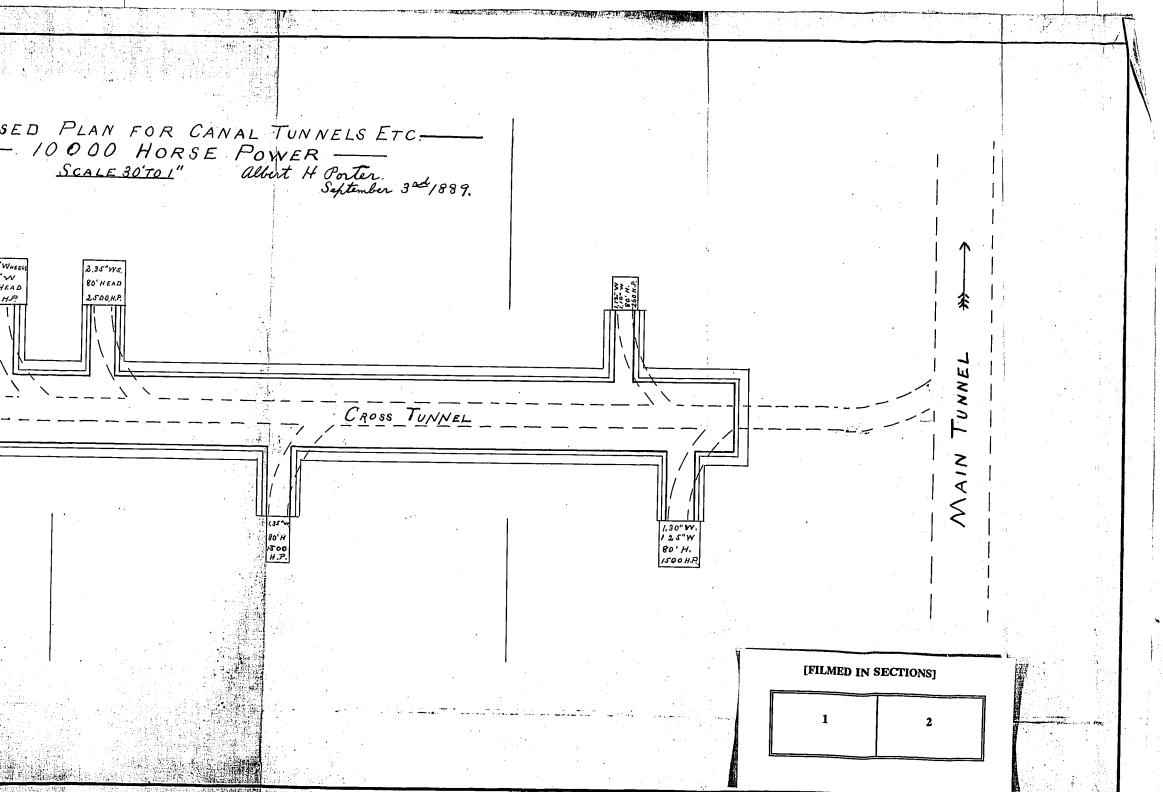

SED PLAN FOR CANAL TUNNELS ETC.
10000 HORSE POWER
SCALE 30 TO 1"
Albert H Porter.
September 3rd 1889.
2.35" WR.
80' HEAD
2,500 H.P.
CROSS TUNNEL
MAIN TUNNEL
1.30" W.
/ 25" W
80' H.
1200 H.P.
[FILMED IN SECTIONS]
1
2

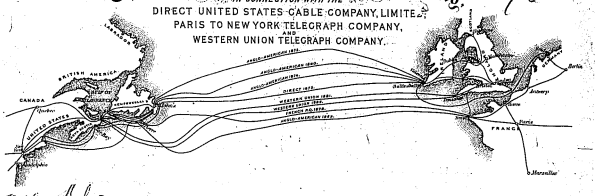
AC-DC

No. 168

The Anglo-American Telegraph Company,
LIMITED.

IN CONNECTION WITH THE

DIRECT UNITED STATES CABLE COMPANY, LIMITED.
PARIS TO NEW YORK TELEGRAPH COMPANY,
AND
WESTERN UNION TELEGRAPH COMPANY.



624 LL DIRECT COMMUNICATION WITH THE UNITED STATES OF AMERICA BY EIGHT CABLES.

OFFICE STAMP & DATE.

LONDON
23, THROGMORTON ST.
21 SEP 88

Time Rec.d 6 47 P Place in From Newyork No. 42 Date Words

TO Hotel Victoria London

Gysbert Kapp erba Vinegardhill wimbledon will Call on you for appointment with Edison to examine his alternating System general Co Will want edisons opinion on same when He returns dont talk price to Kapp

Insull

PLEASE HAND YOUR REPLY DIRECT TO THIS OFFICE.

ELEC. LT. U.S. WESTINGHOUSE. (1892)

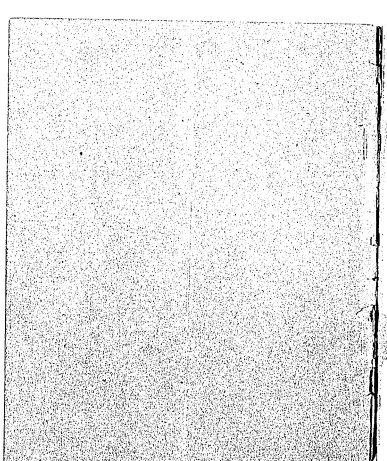
DANGERS

—OF—

ELECTRIC LIGHTING.

A REPLY TO MR. EDISON.

Compliments of the Author.



Dangers of Electric Lighting.

A REPLY TO MR. EDISON.

Mr. George Westringhouse is a very busy man. It is marvellous how he finds sufficient time to look after several car brake interests, the cheapest engine in the world, a dozen or more complicated electric light companies, six or eight natural gas corporations, a score or two of valuable though vexing patent cases that persist in going wrong, a fuel gas process which gives a million cubic feet of pure carbonic oxide from one ton of slate, and a hundred or so other money-coining inventions, all of whose factories are months behind orders, though running twenty-six hours a day.

Of course, it is needless to say that he has the able assistance of a regiment of Department Commanders, each of whom is a peer in his specialty, from the Patent-Defeat Explainer to the Salamander Shock-Taker and Affidavitizer. But even this array of talent is at times overcrowded by the enormous amount of new business pouring in, and unavoidable mistakes will thus occur.

For instance, about a month ago the editor of the *North American Review* called upon Mr. Westringhouse and begged that he would deign to sign a reply to an article by Mr. Thos. A. Edison. Unfortunately Mr. Westringhouse was very busy declaring quarterly dividends of 9 7-16 per cent. and had not a moment to spare; forty-two of his Chief Electricians had just sailed for Southwestern Patagonia to install 3,001,022 Westringhouse lamps; the Literature Purveyor was castigating the editors of the Electrical Whirled-Wind for failing to submit proof of their last editorials; and the Truth Disseminator was in Canada giving lessons in decimal division to the subordinates of the department of farming. No one could give it attention but the Patent-Defeat Explainer, and he, poor fellow, had strained the Left-Wing of his cerebellum in reading Justice Bradley's decision in the McKeys Port Case, and stating to the Associated Press that "a little thing like that was not of the slightest consequence."

He hurriedly dictated an article, and did the best he could with a dessicated cerebellum, but his thoughts would keep wandering to the defeat of the Westringhouse-Gaulard-Gibbs Patents by Slattery and to the Bate Refrigerator Case that gently laid other plans of his upon the cold, unfeeling ice. His amanuensis clattered it out upon cream laid paper and brought it to Mr. Westringhouse on a silver-plated salver. The busy magnate was just then receiving a delegation of Mon-

golian Millionaires who were negotiating for control of the Westringhouse Electric and Fuel Gas Patents in Kamskatka. Gracefully excusing himself, he merely read the preamble describing the beneficent effect of electric lighting upon Public Morals; the history of the Sawyer-Man Co., and the early struggles of the United States Electric Co. He then turned to the last page which extols the economy of the Westringhouse 50 volt lamp and tells what a transendental amount of business (10,0023/4 electric lighting stations of 750 lamps each sold last month; see advertisement on cover) had been transacted by the Westringhouse Company. He smiled over the subtlety of the concluding argument which states that since the Westringhouse System had five times as many central stations as any other company, the System *must be safe* or the public *would not buy it*, when in rushed the Press Dispatch Purveyor with sixteen yards of proof-sheet lists of new plants.

"See here, Mr. Westringhouse," he said, "West Puddeford, Maine, is on the list for an increase of 5,000 lamps, third order; and there's only two farm houses and a gin-mill in the whole county!"

Mr. Westringhouse signed the article and angrily asked, "Who is President and General Manager of the West Puddeford Westringhouse Electric Light, Power, Heat and Construction Company, anyhow?"

"You are, Mr. Westringhouse," humbly replied the trembling subordinate.

"Then who ought to know the condition of the orders from that rising metropolis of the East?" (Corner lots for sale; splendid investment; see small bills.)

"Please, sir; you certainly ought; and I suppose it's all right. But, Mr. Westringhouse, here's Jersey City down for an increase, and don't you know, Mr. Westringhouse, that the Jersey City dynamo was sold to New York State for electrical executions and——"

"O, go to Megolm with your Rheostatted Electrical Execution! It won't work! It can't kill them! Burke Corcoran says it won't! Don't you know that I had Salamander Smith and little Ig Noble swear in the Kemmler Case that they took it three times a day before breakfast? And don't you know that I have stated over my own signature that persons in ordinary health can receive a thousand volts of our current without permanent inconvenience? And when I say a thing is SO, it IS SO, even if it was not so before I said so."

"O, of course, Mr. Westringhouse; we all know that. We don't get a chance to forget it. But then don't you think it would be just as well to leave Jersey City off the list of increases? We have 693 without it, and it will not be missed."

"No, sir. Never!! I hereby organize myself into a new electric light corporation for Jersey City, and order of myself as President of the Parent Company an increase of 5,000 lights. No, make it 10,000."

"But we can't fill the order for six months, and——"

"If you don't leave off your nonsense, I'll make it 20,000. What other places sold their dynamos for 'such ignoble purpose'?"

"Oneonta, sir, and Lynn. At least that's what your Private-Letter-Sunker published in the *Sun*."

"Well, I corporationize myself twice more for luck, and order 6,000 additional for each place. Any more complaints?"

"Well, Mr. Westringhouse, you see the man that started the Sing Sing plant so as to sell out to the Gas Company could not make a trade with them, and he could not pay up, so we have taken back the installation. And you see, he wanted to sicken the gas works, so he gave away three-quarters of the lights to get hold of their customers, and rented the other half for ten or fifteen cents a month. But now all the pay customers have quit on account of poor service, and I think we would better take out the plant, sir."

"What! Never! When you don't make money with a Westringhouse station, the proper thing to do is to order more lights. That's what Staten Island and Denver did! I order 4,500 more lights for Sing Sing. Let me see! 10,000 and twice 6,000 are 32,000; and 4,500 are 47,520. All new business in less than five minutes!! Great Dynamometer! How is that for enterprise?"

"But it makes only 26,500, sir."

"I said, and I repeat that it makes a total of 67,536, call it 70,000 for short, and there's a profit of five dollars

per light; that makes $350,000 profit in four minutes. How much is that a year? By Galvanoscope, I'll declare another stock dividend! Telegraph it to the Associated Press, quick."

And so the article was signed and printed without revision. A few days after it was published the Canadian Patent Decision was handed down "wrong side up," and the disheartened Truth Disseminator returned to Pittsburgh with his Sternum in a sling. (Sternum is Scandinavian for breast-bone.) He limped painfully into Mr. Westringhouse's palatial office and sank wearily upon a crimson velvet divan ordinarily occupied by the errand boy.

"How now, McGinty," thundered the Millionaire, "what in Differential Solenoid is the matter? Didn't I give you full authority to draw for anything necessary? And didn't you strike me for five figures and assure me it was all right?"

"Yes, your Excellency, but the papers state that 'the Canadian Decision means nothing at all, as it simply leaves Edison in position to sue if he wants to.' And I supposed it was all right, though I'm sure I could not understand it."

"All right!! You Electroscopic Idiot!!! It's all wrong!!! You knew I wanted to knock out Edison's American Filament Patent by terminating that electroplated Canadian Patent, and that I sold a lot of stock at 28 on that guarantee."

"Yes, sir; but the papers all say——"

"Megohm the papers to Hyseresis! The Defeat Explanationer and the Dispatch Purveyor circulated that report. Any fool could see that!!! How in Automatic Synchronizer did you get knocked out? That's what I want to know!"

"Why, Mr. Westringhouse, it was your *North American Review* Symposium that did the business."

"Nonsense! That's a magnificent literary production. I signed that myself. Why, I reasoned Mr. Edison completely out of his boots! And it's clear that I am now the Foremost Electrician of the Age! Morten and Poop both say so! Don't you notice how electrical my conversation is? But what's the objection to my article?"

"Objection! Why, I might as well hand in my resignation as to try to explain that to you."

"Go on, sir. I expect every Westringhouse man to tell the truth without fear or favor;—that is, when there's nobody around but me!"

"Well, in the first place, sir, you say that Lineman Feeks was killed by the Direct-Continuous Current. I presume you meant the Straight-Direct-Continuous-Uninterrupted-Non-Undulating Current?"

"Of course."

"Well, but it was the W. current that knocked him out, and three of our linemen found where the connection was that very afternoon, and cut it out."

"Yes, yes. But they were fixed up to keep their mouths shut and sent out of town the same night, so it's all right."

"It's all wrong, Mr. Westringhouse. One of them got drunk and jumped the train at Trenton. He sold his Atlanta ticket and came back to New York next day."

"Holy Jumping Ammeter!! Take him to one of our stations and get him to 'fix' the switch board. Then put the remains in the fly-wheel and say it was the engine."

"It's too late for that; he has offered to peach for 500, and I think some one has him in tow."

"Well, then let him peach. When I MYSELF say the direct-continuous current killed Feeks—'low-tension current used for telegraphic or power purposes'—those are my very words, and who can question what I say?"

"It will not do, Mr. Westringhouse, it will not do at all, for those continuous current fellows advertise inviting the public to visit their stations, and take their current right off any of the dynamos."

"What? Put their hands right on the brushes?"

"Yes, Mr. Westringhouse, right on the brushes, and they can go to any dynamo they like, so it must be a square deal."

"Put their hands right on the brushes!! It's incredible!!! Why, I wouldn't touch the brushes for a million dollars and ten cents!"

"Yes, Mr. Westringhouse, we know all about your

feelings on that matter, because you would not take even one hundred volts when you were challenged to."

"That's enough! That's enough, sir! Don't you say another word on that subject! It's perfectly unchristian to doubt another man's word, especially when that other man's ME. And its simply heathenish to challenge him to prove what he says! Why, if I had to prove everything I said, I would have to go out of business. Those Edison people need not brag. They killed a man this fall!"

"What! I had not heard of that."

"Yes, they did. You see, one of their Madison Avenue consumers went to Europe this summer, and he had them disconnect the circuit, and read the meter before he went. The second day after he returned—the very second day, mind you—they sent him a bill for one hundred dollars for the current that the meter would have registered if he had stayed home and used it; and he died of the shock!! Now, what else is wrong with that article?"

"Well, Mr. Westringhouse, your reference to experiments with dogs was very injudicious just at present."

"Why so, sir?"

"In the first place, everybody knows that Mr. Kennelly used a Siemen's alternate current dynamo in his experiments. In the second place, it's a mistake that says the dog escaped after taking one hundred volts alter-

nate current for sixty-five seconds. It was a misprint, and you have put your foot into it."

"Nonsense, no such thing!"

"Yes, it is, Mr. Westinghouse, for Mr. Kennelly testified under oath in the Kemmler case that that dog was killed, and that the word 'unhurt' was a misprint."

"That's just like Tom Edison, to play such a mean trick. Why, that man actually called me a Shyster in the *Herald* the day after he came home from Europe. Me, a Shyster! And I was ready to make him the richest man in the world by combining with him! And he wouldn't do it, confound it."

"Then some one has been telling about Pickard's experiments with his dog."

"What about that?"

"Why, during the Kemmler hearing last summer Billy Corcoran wanted us to get up some experiments to prove that the alternate current wouldn't kill. So one night Pickard and three or four others of us went to the Sawyer-Man factory on West Twenty-third street and prepared to astonish the natives. We connected Pickard's dog with wet copper plates around one fore and one hind leg, and then we gave him fifty volts from a converter for a few seconds."

"What did he do?"

"O, he stood like a rock; so we gave him 100 volts from converters, and when we opened the circuit he just quietly stretched out on the floor."

"Wasn't hurt a bit, of course! It is impossible to do any damage after passing through a Westinghouse converter!"

"Well, Mr. Westinghouse, we did not think to examine him, but we thought that if he could stand 100 volts without making any fuss, he could easily take 450, so we gave him 450 volts through converters, and then Pickard called him, and he did not move. Then we took hold of him and found that he was dead as a door mat. You see we could not tell whether it was 100 or 450 volts that killed him. Pickard said it was heart disease. We had the fireman chuck the remains into the furnace, and somehow Burk did not seem to want our testimony at all."

"I know all about that story, and told Pickard to keep it quiet and instruct the boys to say nothing."

"Yes, Mr. Westinghouse, but one of them is a sorehead, and he has given the whole thing away. Everybody is laughing over the Westinghouse company's experiments on dogs. And you should have said nothing about a Rhumkorf Coil in your article, for that is exactly what our converters are, and if the public should find that out, they would sling them into the ash barrel, and then where would the great and good Westinghouse Electric Company be?"

"If any one says anything of that kind, I'll deny it, sir; I'll deny it!"

"Mr. Westinghouse, I am sorry to say your denials do not carry weight nowadays; you've overdone it."

"I don't understand you. Do you mean to insult me, sir?"

"O, not at all; I could not do that. But you know that in December, 1888, you published a letter in which you said that a man in ordinary health could take a thousand volts alternate current without permanent inconvenience."

"My very words, and well expressed too. My General Manager and Electrical Instructor wrote that—at my dictation of course."

"Well, Mr. Westringhouse, you say in your article on page 638, that your current is dangerous to life."

"Yes, it is *now*; but it wasn't a year ago."

"How do you account for that, Mr. Westringhouse? It is just the same electro-motive force and same number of reversals now that it was then?"

"True, but during the past year it has unfortunately had a great deal to do with that tender hearted Board of Electrical Control, and they were too much for its temper and ruined it entirely."

"Now, Mr. Westringhouse, that is not fair. You know our current killed several men in the fall of 1887 and during 1888?"

"I don't know anything of the kind, sir; I never read such things when I see them in the papers, and I will not allow any one to tell me about them, and I will not let any of my men know anything about them either. Besides, most things in the papers about electric light are

not true anyhow, unless they come from our Literary Bureau. Any other criticisms on my veracity?"

"I am sorry to say there are a great many, Mr. Westringhouse. Why, it was only a week or so ago that you published in the *New York World* a statement that the circuits of the Brush and U. S. companies were replaced with new insulated wire, and were now perfectly safe?"

"Yes, I did; and Poap and Morten said so too. They ought to know; they are paid enough to know most anything about what I want.

"But poor Harris was killed by running a showcase into a Brush lamp but a short time after."

"No such thing. He died of apoplexy two days before that, and those confounded T. & H. or Edison people burned him with a hot iron and dropped him by that showcase just to injure me—me, a public-spirited citizen who is putting electric lights all over the world for pure philanthropy just to improve public morals. But say—suppose the Brush current did kill him; I did not say in my article that it would not."

"No, but you said in the *World* that the Brush circuits were *safe*, and they straightway killed a man. Now, you say in your article that the current from the converter is entirely separated from the high tension current, and cannot possibly kill any one. So everybody is expecting to have some one knocked out by your converter insulation giving out."

"But it's impossible. I say so, and Poap and Morten

say so too; at least they certainly would if I asked them to. The two coils of wire are absolutely separated from each other by effective insulation through which the primary current cannot possibly penetrate."

"Now, Mr. Westringhouse, how far apart are these two coils, ten feet?"

"O, no; they are in the same iron box—a small box that can be conveniently hung on the wall or on a window sill."

"But are the coils an inch apart?"

"Why no; they are close up to each other, or they would not work; but there's at least a sixteenth of an inch of impenetrable insulation between them."

"What insulation is there that is impenetrable to electricity, Mr. Westringhouse? You see I want to learn all I can from the greatest Electrician of the Age."

"Yes, yes, thanks! Well, I don't know anything that's absolutely impenetrable to electricity, neither do Poap and Morten. And I have even heard Moses say in his simple way, that Electricity, the Hand-Maiden of the Gods, could penetrate with oscillatory spark her igneaceous, angueletical way through a solid cube of plate glass sixty centimeters in horizontal, vertical and diagonal extremities."

"But, Mr. Westringhouse, what impenetrable insulation do you use in your converters, glass?"

"O, no; I believe we use the best grade of cotton and insulating paint, the blackest, glossiest paint you ever

saw. Possibly it may not be impenetrable, but we never have had an accident in which the primary current penetrated the other circuit, never."

"Are you sure? Why, Mr. Westringhouse, did you ever go into the converter room?"

"No, sir. If I could visit twenty rooms an hour in my various factories, it would take me three years and fourteen months to get around. And every one of them is paying an average dividend of 18¾ per cent. per quarter."

"I don't doubt it, Mr. Westringhouse, but if you did go into our converter room you would find more than half the force at work repairing burned-out converters with both coils connected together."

"O, that's perfect rot. That's an Edison story. You see Edison has to maintain a copper mine underground to run his stations, and he can't make them pay on that immense investment. So they get up all sorts of stories against us. They even claim to own a patent on the combination of the Earth with Electric Currents, and threaten to prosecute everybody that buys of anybody else. I can't talk to you any more just now; I have an engagement with the Akound of Swat; he wants to put 62,000 Westringhouse lamps in his Bungalow."

"Just a moment, Mr. Westringhouse! Why, I know that in a single night at our Staten Island Station nine of our converters burned out, and——"

"That was not the converters' fault at all, sir; not at

all. It was my dear friend Whyman rehearsing a Reciprocity speech that did that. That's enough to make anything hot, you know. There is not on record a solitary instance of a person having been injured or shocked from the consumer's current of an alternate current system. Those are my very words, and they are absolutely true and perfectly reliable."

"They may be reLIable, Mr. Westringhouse, but I am afraid they are not quite true. Don't you remember the trouble we had with Unger, the engineer of the Hagerstown Westringhouse station? He had his hand paralyzed by getting the current from a converter."

"Not at all, sir; not at all. He was hurt while in the station, and the current was not the *consumers'* current. A consumer is one who uses the current supplied in his premises, and you see Unger could not be considered a consumer, and so he was not hurt by the consumers' current. See? But anyhow, that accident was of no consequence whatever. Now, there has never been a single instance of a person being killed by the consumers' current from a converter."

"But, Mr. Westringhouse, have you heard of the killing of that plumber at Dallas by touching the converter wires?"

"No, sir; never heard of it! Besides, he was killed by a Slattery converter, and it served him right, for Slattery is knocking out all my alternate current patents."

"How about that laborer killed in the Hudson River tunnel from consumers' current out of a converter?"

"Nonsense! In the first place, there never was such a case; in the second place, he was not killed at all; and in the third place it was NOT OUR Converter that killed him. The whole thing is false. But you never heard of any serious accident from a Westringhouse converter."

"Mr. Westringhouse, did you ever hear of the little daughter of Mr. Welch, I think his name was, who was killed in this——"

"See here," yelled the maguate, "I am too busy to talk with you any more. Aleck, order my Special Car cleaned up for the Limited."

"Hold on, Mr. Westringhouse. We might as well have this out right now! Mr. Welch had our alternate current in his elegant residence, didn't he? He used the consumers' current, didn't he? And we told him it was perfectly safe!"

"I have not the slightest idea what you are talking about. I must go now. Good afternoon!"

"But his little daughter tried to turn on one of our lamps while standing on a tile flooring; she received a shock and was killed. And it is said that since her father is interested in some of our companies, the matter was hushed up and——"

"It's no such thing! She was scared to death. These absurd stories that the Electrical Execution Sharps are telling have simply frightened people out of their senses."

"But Mr. Westringhouse, this happened before that subject was talked about."

"Well, then it's an Edison story! It's false! Why, our lamp sockets are perfectly insulated, and you cannot get a shock from them."

"But Mr. Westringhouse, don't you know that the brass clips that hold the lamp in our socket are in circuit, and any one who touches them may get hurt."

"You make me weary with your nonsense. I would discharge you if you didn't have a five years' contract with me at $10,000 a year ($3,000 cash, and balance stock). Don't you know that any of our men—any of them, will take 1,000 volts of our current without the slightest hesitation?"

"You are mistaken Mr. Westringhouse. Why, don't you remember that last summer Mr. Edison offered $200 to Salamander Smith or that little sneak Ig Noble if either would take even 100 volts alternate current?"

"What? Haven't they taken that yet? I ordered them to do so! What do they mean by not obeying orders? Aleck, telegraph that pair of Ajaxes to go to Orange to-morrow and take 100 volts, or I'll fire them. I suppose everybody is laughing at us, confound their stupidity!"

"Well, Mr. Westringhouse, there are but few statements in your article that are not just as absurd and stupid as the testimony of those fellows in the Kemmler case, and——"

"By the holy induced current, I did not write that aggravating article. Aleck did it, and he assured me that it was all right, and that Ballensberger approved of it!"

"Well, Mr. Westringhouse, what do you wish me to do now that the Canadian matter is ended?"

"I want you to report to Wm. B. Corcoran, of New York, as a philanthropic journalist who is opposed to Electrical Execution. I want that law repealed, and it won't require much absorption of the surplus to knock it out. You see, I have kept three of my most expensive legal luminaries at Albany all the fall, and have offered to replace the execution apparatus with some little designs of my own especially for the purpose. Of course, the State will accept when I have such eminent persuaders! And then the apparatus will not kill the criminals! See? That's Burk's idea, and it's a mighty good one too. He trots out the most philanthropy for the least money of any man I know. And then I want you to work against any regulation of electric currents by the Legislature. You know about sixteen or twenty common working-men or clerks have been killed in New York City, and, of course, some of the politicians are using it to squeeze our companies a little. As if careless working-men who get in the way of our wires deserved any consideration!"

"But, Mr. Westringhouse, their wives and children——"

"O, what are our orphan asylums and poor houses

for, I'd like to know? And I am a very liberal contributor to charity myself! Aleck, how much did I give last year to the relief of the poor?"

"But, Mr. Westringhouse, the *Morning Journal* says that the New York delegation is pledged to stop the slaughter by electric wires, and that they are all honorable men who cannot be purchased."

"O, that's all right; I don't need to purchase them. You and Burk just labor with them, and rage and tear against the heartless electric light corporations, and say it's their duty to see that the wires are put underground immediately at once! That's the lay that some of the city officials are on. Then the Legislature will go through a lot of funny business about putting the wires underground, and perhaps it will give my companies a chance to put in separate subways all over town. And if they crowd us, we can get Judge to give us another injunction. And by that time we can load the lambs up with our stock, and they can take care of themselves while we boom the cheap fuel gas business. See? But for heaven's sake, buy up or hush up any fool that talks about asking the Legislature to make us use safe currents. That would put us into the bouillon, and ruin the entire speculation!"

"But, Mr. Westringhouse, the *Tribune*, *Times*, *World* and *Sun* are all urging the Legislature to shut down on high tension currents and——"

"What? The *Sun*? And the *World* too? After all the 'special dispatches' and full-page reading matter ads

I've given them! That's real mean. But I know all about the next Legislature; Burk's told me all about them. He says he controls the Dan-Any-Men, and that he can work the others on the 'Put-the-wires-underground racket.' Don't you fret! We are all right, and the people of New York can move away if they don't like it. We have them fixed up solid, if some of the coroners or the District Attorney don't indict us for manslaughter some day. But even if they do, we can have Salamander and Ig Noble swear it off on some of our cheap station men. It's all right, I tell you. New York has got to grin and bear it. Look at this letter from Cravat if you don't believe it."

Taking the document and placing his hands on the brass railing, the Truth Disseminator turned on the Westringhouse lamp, as it was rapidly growing dark. There was a moment of silence in the room while the pungent odor of burning flesh filled the air. The converter insulation had given out, and the gentle spirit of the Truth Disseminator had fled. As Mr. Westringhouse arose from his chair, the body of his faithful employee fell upon the elegant Turkish rug with blood pouring from the burned hands.

"O, this is frightful! This is too bad!" cried the millionaire, "He has ruined my thousand dollar rug! Aleck, have the porter clean up this muss. O, by the way, have our special London correspondent in the next room cable to New York that the Emperor of Russia—I mean the Czar

of Persia—has just contracted with the Westinghouse Company for Forty Million Dollars worth of apparatus, and our stock has gone up eight and a half points on the Bourse. And have our San Francisco correspondent upstairs wire the Associated Press that Billy Collins, lineman of our company at Elko, Nevada, accidentally received the full force of our 5,000 light machine while on a pole. He suffered terrible agony for forty-two minutes until the current could be shut down, when it was found that he was unhurt and he walked home. Don't forget to say 'that this is the current that is to be used for electrical execution.' That's all. O, by the way, telephone the coroner that a dear friend of mine has just gone to his long home with heart disease, and his sorrowing family specially request that no examination should be made. Then ask the Stock Room Manager if that last dozen of nickle-plated coffins has arrived. If so, put the remains into one and bury him in the usual manner. Give him the regular style of funeral for Chief Superintendents and send the bill to the company—there's nothing mean about us. O, telegraph the Electrical Whirled-Wind to say editorially that 'there have been a few unimportant electric wire accidents recently in New York, but the reports are grossly exaggerated.' And write the Executive Committee of the National Electric Light Association to pass half a dozen more assorted resolutions in the usual style; 'perfect safety,' etc. They'll know what I want and Moses can write it for them if they wish."

And then the magnate went home to write an article on "The Sanctity of Human Life."

The Westringhouse Electric Co.,

PITTSBURGH, PA.

Manufacturers under Patents and Applications for Patents controlling the sale and use of Alternating Current Electric Lighting Apparatus and Distributing Systems.

The success of the Alternating Current system of Electric Lighting is demonstrated beyond question.

Note the sale of 132 Central Station plants by this Company, aggregating a total generating capacity of 220,000 sixteen-candle power lamps, within the brief period of twenty-four months, together with the fact that of these 132 Central Stations, 38 have increased their plant since starting.

IMPROVED LAMPS.

By reason of an improvement in the manufacture of lamps which has been secured for the exclusive benefit of the w rs of apparatus furnished by the Westringhouse Electric Company, this company will *guarantee from its apparatus and lamps 50 per cent. more light from a given expenditure of power (such than can be obtained with any direct current system.*

ALTERNATING CURRENT METERS.

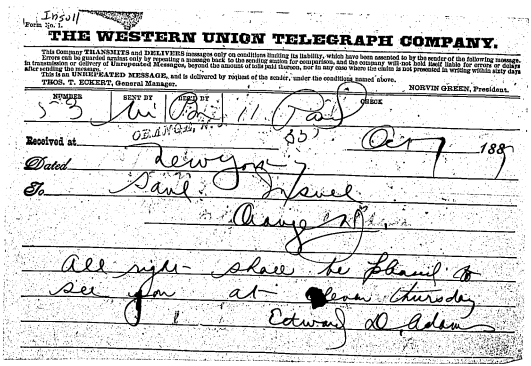
This Company's Meter measures the whole current by a positive mechanical movement. It registers directly in lamp hours and indicates by dials like a gas meter. It is not affected by temperature or local conditions.

ALTERNATING CURRENT MOTORS.

Highly efficient. Have no commutators or brushes, and can be started, regulated and reversed without breaking a connection.

SMALL MOTORS FOR USE ON EXISTING ALTERNATING CIRCUITS OF THIS COMPANY.

(From the Electrical World, p. xiii, December 22, 1888.)



Form Gn. 1.

THE WESTERN UNION TELEGRAPH COMPANY.

This Company TRANSMITS and DELIVERS messages only on conditions limiting its liability, which have been assented to by the sender of the following message. Errors can be guarded against only by repeating a message back to the sending station for comparison, and the Company will not hold itself liable for errors or delays in transmission or delivery of Unrepeated Messages, beyond the amount of tolls paid thereon, nor in any case where the claim is not presented in writing within sixty days after sending the message.

This is an **UNREPEATED MESSAGE**, and is delivered by request of the sender, under the conditions named above.

THOS. T. ECKERT, General Manager. NORVIN GREEN, President.

NUMBER	SENT BY	RECD BY	CHECK
55			

Received at OLEAN, N. Y. 55 Oct 7 188

Dated New York

To Saml. J. Tilden

Gramercy Park

All right shall be pleased to see you at 9 o'clock Thursday

Edward A. Adam

Stop Wires

EDITORIAL ROOMS
OF
The Morning Journal,
Room 45 Tribune Building,

New York, October 1899

My Dear Edison

The horrible killing of the Cincinnati today at the corner of Chambers & Centre street which I saw myself has created a profound sensation, and brings to a focus the public feeling against the "live" wires.

It will make what you have to say on this matter most opportune and I shall send out a man to you in the morning to get it. You can either dictate it to him or

do it through your own strong sophisticated way will cost you back trouble.

Believe me
Yours faithfully
J.H. Clarke

The public wants a strong word from a strong man. Your points you made about all the insulation being insufficient and the fact that they could lower the voltage by using copper wire (does it right?) and the extreme limit of voltage that should be allowed are all capital.

Elec Wires

ans Oct 17 89

14 West 34th St
New York Oct 14, 1889

Dear Mr Edison

I find that the public from receiving the Reporters interviews with you in respect to the Lack vicious of the arc light currents have received the idea that your system is equally dangerous with the others and after careful reading of the reports myself I must say they are well adapted to convey this idea. I can only account for this by supposing that the reporters have misrepresented what you have said in relation to your own system and if so I think it is a duty you owe yourself to set the public right on this question. This is unfortunate

for the stockholders in your Companies as they [Letter] to become objects of suspicion and the Companies in consequence suffer.

A communication from you to the principal newspapers in New York & Brooklyn correcting this false impression would greatly benefit our Companies and give them the supremacy and boom the stocks. There never has been such a grand occasion to write upon for this purpose as this awful event and you will greatly relieve the many stockholders in your Companies if you will clearly inform the public of the entire harmlessness of the Cements used at our stations in all the large Cities.

With great esteem Yours Sincere Friend

Eugene Cromwell

Reagan

WINSLOW, LANIER & CO.
N.Y.

New York, 16th. October, 1889.

Thomas A. Edison, Esq.

Orange, New Jersey.

Dear Mr. Edison:-

I send you by this mail copy of a map of the City of Buffalo that may be of use in connection with your study of the Niagara Falls project.

I learn from the local agent of the Hartford Boiler Insurance Company in Buffalo that they estimate the total horse power used daily in that city as between 60,000 and 75,000. Nearly accurate figures can be procured in about a week's time and at some expense if the estimated statement is not sufficient. Coming from this authority and based upon the business that they do and that which they would like to do, I think we may assume it is fairly correct.

In the town of Tonawanda, I am reliably informed, that 3,000 horse power is used by the wood-working establishments alone, 250 for the lighting of the town and not less than 35,000 up to a maximum of 50,000 for all the manufacturing purposes. The gentlemen in control of the wood-working establishments are those who have offered to take power for themselves and light and power for their electric Company.

The following distances are furnished me by those who know, as those which would be available as a route for right of

way between Niagara Falls and Buffalo:

Tunnel lands at Niagara Falls to center of the town of Tonawanda, 9 1-2 miles

Tunnel lands to northern city limits of Buffalo 13 2-3 miles

Tunnel lands to City Hall, Buffalo, 19 1-6 miles.

The City Hall is located one mile beyond the manufacturing center of the City.

I telegraphed you a few days since that the engineers, Messrs Evershed and Porter, are within call and I can arrange for them to meet you at any time and place you may select, for such explanations as you may wish from them as to the details of their project.

In considering this business, I do not know that I sufficiently expressed my idea upon it in our brief interview the other day, and therefore recur to it now. I look upon the enterprise first as a project to furnish power by electrical means in the immediate vicinity of the town of Niagara Falls. A comparatively small amount of light would also be consumed there. That if the project upon this basis will return a fair rate of interest upon the capital invested, we can safely engage in the business, trusting to development under good management for the larger results to be expected. As one of the means of obtaining large profits, we look, first: to the supply of light to Tonawanda and Buffalo; second: to the supply of power to those places.

Thomas A. Edison, 3:

Professor Rowland writes me that he has, in the preparation of his report, written to each of the various electric light companies for special information upon the subject. If there is any information that I can gather for you through my assistants, I shall be happy to do so, and if you think best at any time I will make an appointment with you some evening for further discussion of the matter.

Sincerely yours,

Edward D. Adams,

Jr.

Niagara

P.O. Box 486.

17 Nassau Street.

New York, 21st Oct. 1889

Dear Sir,

Since writing you on the 16th instant I have received a communication from Charles B. Gaskill, proprietor of the Cataract Milling Co. of Niagara Falls, containing some information that may be useful to you in considering this project.

Very truly yours,

Edward D. Adams.

Letter

Mr. Thomas A. Edison,

Orange, N.J.

Reports

Form No. 1.

THE WESTERN UNION TELEGRAPH COMPANY.

This Company TRANSMITS and DELIVERS messages only on conditions limiting its liability, which have been assented to by the sender of the following message. Errors can be guarded against only by repeating a message back to the sending station for comparison, and the company will not hold itself liable for errors or delays in transmission or delivery of Unrepeated Messages, beyond the amount of tolls paid thereon, nor in any case where the claim is not presented in writing within sixty days after sending the message.

THIS IS AN UNREPEATED MESSAGE, and is delivered by request of the sender, under the conditions named above.

THOS. T. ECKERT, General Manager. NORVIN GREEN, President.

NUMBER	SENT BY	RECEIVED	CHECK
17	Tele	19m 27	Paid

Received at ORANGE, N. J. 5 07 Oct 21 1889

Dated Henry Park 21

To Thos. A. Edison 31

In view of Pt notice and to insure promptness I have asked Lott Cognevich to be at Laboratory Tues Am tomorrow which may supply information more Complett

Edwd D Adams

AC-DC

HAROLD P. BROWN,
ELECTRICAL ENGINEER,
201 WEST 54TH ST., NEW YORK.
DESIGNER OF APPARATUS FOR SPECIAL PURPOSES.
CONTRACTOR FOR ARC AND INCANDESCENT
ELECTRIC LIGHTS AND STEAM POWER.
LIFE PROTECTING APPARATUS FOR ARC LIGHT DYNAMOS.

Answ. Oct. 24/89

Oct. 22, 1889.

My Dear Mr. Edison, As requested I send you herewith a list of the deaths from electric lighting which have been brought to my notice through newspapers, correspondence etc. As such accidents in the past have been hushed up I feel that my list represents little more than half the total number. I have enough, however, to show that the advant of the alternating current during the past two years has greatly increased the death rate. The total deaths in 1886 were but 10; in 1887, 19; in 1888, 42 and the rate so far this year will show a corresponding increase. I have secured a list of all the building lighted with the alternating current apparatus in this city and will be able, as soon as the stations start up after the injunction matter is decided, to indicate just where interesting tests for leakage can be made on a wet night.

Sincerely Yours, Harold P. Brown.

[ENCLOSURE]

HAROLD P. BROWN,
ELECTRICAL ENGINEER,
201 West 64th St., New York.
Designs of Apparatus for Special Purposes.
Contractor for Arc and Incandescent Electric Lights and Steam Power.
Life Protecting Apparatus for Arc Light Dynamos.

Deaths from Electric Lighting sent to me since July 1, 1889.

Columbus, O.	Wm. Fraas, clerk killed by touching a grounded pulsating circuit while on sidewalk, July 5, 1889.
Buffalo, N. Y.	Lemuel W. Smith, killed by touching the brushes at Brush station, Aug. 8, 1881.
" "	Hugh P. Ferry, lineman, killed by alternating current , Sept. 5, 1889.
Phila., Pa.	Lineman T. & H. Co. by touching grounded circuit while standing in street.
San Francisco,	Workman in iron works who touched grounded Brush circuit. (These two from Mr. Ezbridge T. Gerry's report.)
New Orleans, La.	Jas. Dixon, employee Louisana E.L.Co. killed by alternating current July 17, 89
Wichita, Kan.	Ernest Condwick, child killed by dangling wire over T. & H. street car line on July 29, 1889.
Pueblo, Col.	Jacob Kummerle, fruit dealer, killed on sidewalk by touching incandescent lamp of Heisler alternating current system, on Aug. 29, 1889.
St. Louis, Mo.	Henry Goodyear, telephone lineman, killed by Westinghouse alternating current on Aug. 31, 1889.
Houston, Tex.	Wm. Hanson, clerk, killed on sidewalk by alternating current wire, Sept. 2, 1889.
Westfield, Mass.	Jas. Watson, fireman, killed by pulsating current while standing on ground, Sept. 4, 1889.
Washington, D.C.	John P. Martin, telephone employee, killed by pulsating or alternating on Sept. 16, 1889.
New York City.	D.A.Henry, Supt. East River Co. killed by alternating current Sept. 8, 1889.
" " "	Guiseppe Mazza, fruit dealer, killed by alternating current from U.S. station on Sept. 14, 1889.
" " "	John Betz, Lineman U.S.Co. killed by alternating current Sept. 21, 1889.
" " "	Jas. Powers, lineman Brush Co. killed on Sept. 16, 1889.
" " "	Chas. Erdmann, killed by alt. cr. Oct. 8, 89
" " "	John E. Feeks, killed by alt. cr. Oct. 12 89

See list on page 32 of pamphlet sent herewith.

...NIER & CO.
N.Y.

New York, 22nd. October, 1889.

Thomas A. Edison, Esq.

Orange, New Jersey.

My dear Mr.Edison:-

I send you tonight, by express, a statement from the New York World of Sunday last respecting the two Tonawandas; reports on the Water Power of the U.S., being statistics of power and machinery employed in manufactures, by Professor W.P.Trowbridge, prepared under the direction of Supt.Francis A. Walker; statistics of the Trade and Commerce of Buffalo comprised in the annual report of the Buffalo Merchants Exchange,and Sketch of the Commerce, Industries and Resources of Buffalo.

I shall move as rapidly as possible to furnish you with all the information you ask for. The Engineers have been instructed to prepare whatever you require with the least possible delay.

Very truly yours,

Edward D. Adams.

Porter's Engine

Form No. 1.

THE WESTERN UNION TELEGRAPH COMPANY.

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This is an UNREPEATED MESSAGE, and is delivered by request of the sender, under the conditions named above.

THOS. T. ECKERT, General Manager. NORVIN GREEN, President.

NUMBER	SENT BY	REC'D BY	TIME	CHECK
39	Lui		3:0	Od

Received at ORANGE, N. J. 12 0 Oct 23 1889

Dated Oct 23

To Thos A. Edison

Find from manufacturers that can use thirty inch wheel under ninety foot head which will give one thousand H.P. and three hundred and fifty revolutions shall we make plans accordingly. R. H. Porter.

Oct. 23rd, 1889.

Hon. Don.M. Dickinson,

Esteemed Friend:-

× × × × × × ×

The facts are as follows:-

We have several circuits of over twenty five (25) miles in length and at times in fact, run over frequently. We have coupled two (2) circuits together, thus carrying the current through fifty (50) to sixty (60) miles of wire. None of this wire was over number six (6) in size and much of it was number eight (8). We also run electric motors, arc lights and incandescent lights all on the same circuit and do so regularly. As to loss of lights of long lines, we have many long circuits and on some of the longest of them we frequently run full sixty five (65) two thousand (2000) candle power lights. That is the full quota of lamps for the machine.

This is the substance of what Mr. Leggett, President of the Brush Electric Light Co. said to Mr. Ely recently and which is doubtless the foundation of the inquiry, as Mr. Leggett informs me.

Very truly yours,

James. L. Edson

Niagara Falls, N. Y.

October 24, 1889.

Francis Lynde Stetson, Esq.,

New York City.

Dear Sir:-

Your letter of 22d received and the data desired will be immediately procured and forwarded to Mr. Adams.

It may be of interest to state that at an interview today in Buffalo with Mr. Adams, Vice Prest. of the Brush Electric Co., he gave me the following information:-

1st. The present use of power by the several Electric Co's is as follows:-

Brush Co., 900 to 1000 h.p.
Thomson-Houston Co., 500 "
United States Co., 250 "

2d. He estimates 35,000 to 50,000 h.p. as the total in general use in the City of Buffalo.

3. He states that they have one circuit of 20 miles upon which a 30 arc lamp dynamo supplies 30 full lights of 2000 c.p. each. This line has been in successful operation about two years.

4th. He fixes the loss of their motors for power at 15%. They deliver 85% of net power from their stations and collect pay for it.

5. He states that the growth of their business is restricted owing to insufficient accommodations at their stations.

6. They supply lamps and power off the same wire, but recommends separate lines, within the city or town, to avoid annoyance to both classes of consumers as they frequently demand both light and power in excess of the line capacity.

7. As to cost of power to the Brush Co. in answer to the question he gave the cost of coal only, stating that to obtain the cost of power we must figure the usual expense of handling, attendance of engine, stokers wages &c. This, using the lowest estimates and under the very best conditions he gave, figures out $30.00 per h.p. per annum.

Remark, that he stated that their largest and best engine (working under 600 h.p.) only gave these results

8. The enclosed clipping from to-day's Buffalo Courier shows trial balance of the Brush Co. which Mr. Adams stated was furnished from their books.

Please observe that their stock of One Million dollars is one half water; so that the return of 6% he

figures out for the public equals really 12% upon actual capital.

9. Mr. Adams further stated that he considered the electrical business as good for 8 to 10% safe earnings upon the investment which would seem to be in line with the showing of his Company.

Very Respy.,

Chas. R. Gaskill

Winslow, Lanier & Co.
Bankers.

New York, October 29th 1889.

Thomas A. Edison, Esq,
Orange, N.J.

Dear Sir,

There are two projects at Niagara Falls, in addition to the one to which we are now particularly devoting our attention, that have existence on paper.

I send you herewith the result of my investigations as to the rights and privileges of these two enterprises. My desire has been to know what chances of competitive organizations existed. Both are now offered to me. The Canadian one I have declined to consider. The American one, called the Lewiston project, one having a special charter from the state, can be procured for a nominal consideration. Out of abundant caution, I have taken steps to ascertain exactly what can be done in this direction.

As to the cost of coal at Tonawanda I am assured that steam (soft) coal is

selling in Tonawanda at from $2.20 to $2.75 per ton. No hard coal is now used there for steam purposes. Soft coal is now almost exclusively used in lieu of the refuse from the saw-mills formerly used; which refuse is now found to be more valuable for sale as kindlings, and is, therefore, used for that purpose, being replaced for steam purposes by coal.

Very truly yours,
Edward D. Adams,

EDAm

[ENCLOSURE]

Niagara Falls, N. Y. October 27, 1889.

My dear Mr. Rankine,

Yours of the 26th just received.

A few days since a gentleman came here from Toronto fresh from a conference with Canadian parties who had asked him to take hold of the Canada scheme and take it to England to be capitalized. He stated to me that the terms which the Canadian authorities exacted for permission to use their reservation lands and for access to the run and use of its waters, were

1st: A payment of $50,000 cash, for the two first years of occupancy and use, i.e. $25,000 per annum rental. Thereafter an annual rental of $30,000 up to and including 20 years, and then the Canadian authorities would fix the future charge at such sum as the worth of the plant, its uses &c. would warrant. Or that they would agree upon $50,000 annual rental if satisfactory to the parties who were interested.

My informant stated that much effort was made to soften these terms, but without avail and that he, personally, preferred the Niagara Falls (Tunnel) plan and wished to secure it for London parties who would at once take hold and build it &c. &c. He further stated that the authorities at Washington had been asked about duties upon the power to be transmitted to the American side and that no favorable decision of freedom from taxation or duties could be obtained which was another obstacle &c.

[ENCLOSURE]

He visited Lockport, looked over their plans and returning here informed me that they were not worth considering, and finally said: "The fact is, your Niagara Falls "Tunnel scheme is the only one worth my time to engage in "and if 60 days' time, with control, can be given me I will "raise the capital and commence work."

Assuring him of our inability to entertain any proposition,- the interview ended.

From another source I learn that the terms of the Canadian government are substantially those given me by this party.

It would seem to be unnecessary to call attention to the difference existing between the two regions and people separated by the Niagara River. Upon the American side, within 30 miles of Niagara Falls; we have 400,000 population, 15 great trunk railway lines, and with every pound of available water power in full use and probably 50 to 75,000 house power made from coal in full and active employment.

Upon the Canadian side within 30 miles, they have a population of less than 75,000, two lines of railway, with several thousand unused horse power (water) along the Welland Canal and with a class of people 50 years behind the Americans in energy and ability to thrive and prosper.

That their power can be transmitted I do not doubt. That it can be of any local value for mills, factories &c. for many years to come, I can safely deny, and any engineer

[ENCLOSURE]

of ability who will carefully examine the physical features of the Canadian side of the river also weigh the fact that all inlets for water to propel his wheels must have their commencement along the edge of and within the rapids leading to the "Horse-shoe" Falls, subject to interruptions from fields of ice tumbling and irresistibly forcing its way to the river below - must pronounce against the desirability of a power subject to such interruptions and which would be fatal to any investment where earnings are expected to be derived from transmitted power. From long experience with power I insist that only that which is continuous and always reliable should receive consideration.

Truly yours,

Chas. B. Gaskill.

W. B. Rankine, Esq.,

New York.

[ENCLOSURE]

EDWARD D. ADAMS
DEC
29
1892
NEW YORK

MEMORANDA.

The hydraulic canal now at Niagara Falls is an open cut about 2/3 of a mile in length, 7 feet deep and 60 feet wide, cost over $300,000 - exclusive of lands given by the Parks - and has an average capacity of about 6,000 h.p. now fully used. In Jan., Feby. and first half of March there is some trouble with slush or anchor ice which reduces its average capacity 20 to 40% according to the severity of the winter. It should be understood that the character of ice referred to is not that which comes in solidform from the lakes and down the river but forms in the river and open canal and frequently for several hours closes all the wheels in use upon the Canal. This difficulty becomes serious in proportion to the length of the open canal or conduit and is lessened and removed when the water wheels are placed near the source of supply. The plans of the Tunnel Co. locate the wheel pits within 3 to 400 feet of the deep waters of the Niagara River which will insure continuous power.

It is of very great importance in planning for the use of Niagara power for electric light and power purposes in Tonawanda & Buffalo that the public understand that it can be made reliable and always available. Particularly is this the case with reference to electric light the revenue from which can be made to exceed one half million of dollars annually. Were the City of Buffalo sup-

[ENCLOSURE]

plied with light by transmission from Niagara and the power prove to be eccentric during several weeks in the winter it would give rise to difficulties of a very grave nature. The only safe plan is, to have as little open Canal as possible, place the water wheels as near the river as practicable, with liberal connections with the Channel and the power will then be continuous and reliable. This condition of location the Tunnel plan can only supply.

The writer has had fifteen years experience as a manufacturer upon the hydraulic canal here and during some of the severe winters has suffered a loss during the months above named of from 25 to 50% in the output of his mills. This could not have occurred under the Tunnel plan of water supply.

The construction of a 24 foot Tunnel 1¼ miles permits of the discharge of water sufficient to produce 120,000 horse power. This result cannot be secured by any other plan without at least doubling the cost, and when once constructed the cost of maintaining is reduced to the minimum since an underground tunnel in rock once built needs no repair thereafter.

The advantages of the Tunnel project may be summarized as follows:

1st. The production of the greatest amount of power for the sum to be expended.

[ENCLOSURE]

2nd. The location of the wheel pits adjacent to the river will furnish continuous power not obtainable by any other plan.

3rd. Cost of maintaining reduced to the minimum. All work to be done is in rock and of the most durable character.

4th. As part of our plan is to absorb the Niagara Falls water supply system which will yield a revenue of 12 to $15,000 per annum, location must be had upon the river to secure pure water for domestic uses.

5th. The location of Pulp and Paper mills should be such as to permit the use of fairly clean water which should also come directly from the river. This industry will be largely represented here. Our offers from this source exceed an annual rental of $42,000 conditioned upon location of the mills upon the river (lands adjacent).

6th. Lake and Erie Canal transportation available without added expense.

7th. Continuous power for Electric transmission to Buffalo which will yield an immense revenue. The tunnel plan presents the only sure method of using the waters of the Niagara without danger of stoppage during extreme winter weather.

[ENCLOSURE]

8th. The Tunnel Co. will acquire about two hundred acres of lands under water, the title to which follows that covered by our contracts.

Respectfully submitted,

Chas. B. Gaskill.

[ENCLOSURE]

The objections to the Lewiston or Suspension Bridge scheme, are as follows:

1st. An equal sum expended on the Lewiston Co. plan will produce less than one-half the power obtained by the Tunnel plan.

2nd. Requires a surface Canal of ~~about~~ at least two miles in length which is objectionable as its capacity is liable to be reduced one-half at times during winter months.

3rd. Extra cost to maintain. Passes under railroads and streets requiring bridges, excludes vessels unless the Canal is of large size adding to its cost and requiring draw-bridges, &c.

4th. Presents upon the surface a large property subject to taxation.

5th. Will not supply a power under all conditions suitable for electrical transmission to Buffalo.

6th. Its location away from the river does not present the advantages for location of mills and factories which a frontage along the river gives. This has special reference to sewerage the uses of clear water for domestic and manufacturing purposes, easy access by lake and canal vessels laden with heavy freight both raw and manufactured material. These and other special advantages cannot be had where an inland power is located two or three miles

[ENCLOSURE]

away from the Niagara River with which it is only connected by a slender Canal..

7th. Finally it is not understood that this company (Lewiston) have acquired any lands upon which to locate mills and factories, nor right of way, nor have they in hand any discernable revenues as an inducement to capitalists to carry out the project.

Relations to Rowland

Nov. 1889.

17 Madison Street

New York Nov 2nd 1889

Thomas A Edison Esq
Orange, N.J.

Dear Sir

Your letter of October 31st respecting Hall's Report of the Geology of the State of New York has attention.

I inclose copy of two communications received from Professor Rowland, which give me the impression that he has not yet dug beneath the surface.

Sincerely yours,
Edward D. Adams,

Atty

[ENCLOSURE]

JOHNS HOPKINS UNIVERSITY,

Baltimore, Md., Oct. 27th, 1889.

Edward D. Adams, Esq.

Dear Sir:-

I believe it will take me another month to write out a full report on the transmission of the power of Niagara Falls. In the meantime if there are any questions that I can answer at once, I would be glad to do so.

The whole question is one of cost. So far the answers I have obtained from the electric companies have been, to say the least, foolish. They are perfectly willing to help spend the money but the schemes submitted are either vague or impractical. So far I believe that the City of Buffalo might be lighted from Niagara Falls and even small powers of 10 to 20 horse power furnished but even in these cases the cost would be very little short if any, of erecting a large central station with a steam engine at Buffalo. I believe it would cost from $60. to $70. per year per horse power in Buffalo for large powers and I suppose this is beyond the cost of steam power there. Have you any data as to the cost of steam power in large mills at Buffalo or Tonawanda?

Hitherto electric transmission of power has come in competition with small steam engines only, in which the cost of power is often $200. per h.p. per year for a 10 hour service. But when it has to compete with large steam engines, it must furnish power for about $50.

[ENCLOSURE]

Have you any data as to the cost of water power as delivered from the turbines at Niagara Falls . To the $5. for water privileges must be added the cost of attendance and the interest and depreciation on the cost of turbines, turbine pitts, water ways etc. I suppose this would make the figures $10. or even $15. per year. I propose to take the figures at $10. if you have no other data for an estimate.

As to local distribution of power within the limits two miles, I believe power can be furnished in large mills for from $30. to $40. per year per h.p. but I will give better estimates as soon as I can collect the data.

As to Tonawanda, lighting can be carried on there with economy, I think, and small power furnished. As to large powers, all depends on the cost of steam power there. I believe that, with proper business and electrical management, it might pay.

In case of both lighting and power, however, currents of high tension (death-dealing currents) must be used in case of distance transmission.

The proper method of lighting Tonawanda would be by alternating currents, in the use of which the Westinghouse Company stands preeminent. Their system is eminently practical and carried out with regard to theoretical as well as commercial efficiency. At the same time the high potential wires in the street are highly dangerouse. I will consider the case more fully in my report

Yours sincerely,

(signed) Henry A. Rowland.

PS: This is for incandescent lighting. For arc lights I believe the Brush system is the best. This company now belongs to the Thomson-Houston.

[ENCLOSURE]

JOHNS HOPKINS UNIVERSITY,

Baltimore, Md., Nov. 1, 1889.

Edward D. Adams, Esq.

Dear Sir:-

Since writing my last letter I have received a letter from the Westinghouse Company about the lighting of Buffalo and Tonawanda in which they think that neither would pay commercially. I agree with them with respect to Buffalo but not with respect to Tonawanda. The latter can be accomplished by the use of a higher potential than the Westinghouse Company use. The Brush Company have both an arc and incandescent system of very high potential and the Company make a success of anything they undertake. So far as I have been able to calculate, the lighting of Tonawanda would pay a little better than to use a steam plant there but even that is uncertain.

As to local distribution of power, my figures are now running from $35. to $45. for a radius of 2 miles. It seems more and more certain that electric transmission cannot compete with large steam engines beyond five miles.

Yours sincerely,

(signed) Henry A. Rowland.

Niagara Falls.

WINSLOW, LANIER & CO.
N.Y.

New York, 4th. November, 1889.

Thomas A. Edison, Esq.

Orange, New Jersey.

My dear Sir:-

Supplementing my letter of November 2nd., enclosing some communications from Professor Rowland, I now send herewith copy of a letter from Prof.Henry Morton and one from Prof.Coleman Sellers, both upon the same subject.

Permit me to suggest for your consideration, the advisability of inviting Prof.Rowland to accompany you when you visit Niagara Falls. Should you not be personally acquainted with him and prefer that I should extend the invitation, I shall be happy to do so.

Sincerely yours,

Edward D. Adams

[ENCLOSURE]

Hoboken, N.J. September 27,1889.

E. D. Adams, Esqr.

Dear Sir:-

In reply to your question respecting the practicability and economy of transmitting power in large amounts through long distances (say in units of 1000 horse power for ten or twenty miles) by means of electric currents, I would say that the problem is not one which has as yet received anywhere its practical solution, and therefore we cannot say it is certainly feasible because it has already been done in such and such a case.

Large amounts of power have been transmitted to distances of one or two miles and small amounts of power have been transmitted for long distances, such as 30 miles, but the combination of large amounts of power and long distances has not yet been realized in practice, and without doubt something new in the dimensions and proportions of electrical machinery must be developed in order to meet the requirements of such a problem as you propose.

Enough however has been done to furnish a sound basis for general calculations and estimates, and having gone over these with great care in a variety of cases, I feel entirely satisfied that a plant could be constructed for the transmission of 1000 horse power, through a distance of 10 or twenty miles, at such a cost as would make each horse power, available at the end of the line, cost from $10 to $20 pr.year; this including all interest on the cost of electrical machinery, line wires, buildings and other structures, and the expense of maintenance as expressed in wages of attendants and cost of repairs. This does not include the cost of producing

[ENCLOSURE]

the power by turbines or otherwise at Niagara, which I have not examined or attempted to estimate.

In my estimation the difficulties, expensiveness and wastefulness of any pneumatic method of transmitting power for such distances render it unworthy of consideration in this connection.

As to the various methods in detail by which power may be conveyed by the use of electric currents, a full discussion would involve the writing of a treatise, and I would suggest that the most complete and satisfactory method to secure the best of these, would be to ask for propositions from the principal electric companies and submit these to competent Electric and Mechanical Engineers for selection.

Very truly yours,

(signed) Henry Morton.

PS: For larger amounts than 1000 H.P. it would simply be necessary to duplicate the 1000 H.P. plant.

[ENCLOSURE]

3301 Baring St. Philadelphia, Oct'r 5th 1889.

E. D. Adams, Esq.,
New York.

Dear Sir:-

In reply to your recent favor asking me to report to you, this week, on the practicability, reliability and cost, as compared to steam power of large amounts of power transmitted by electricity from the Falls of Niagara to Cities distant ten or twenty miles, I would say that the subject is one demanding more time, but I have labored diligently to secure for you such information as will enable you to judge of the value of the proposed method of utilizing the power of Niagara River near the Falls, and the cost of the power there generated when carried to the distant places.

The cost of steam power, per horse power per annum, has not been fixed with enough certainty to place it among the known quantities. I am clearly of opinion, that with coal at $5 00 per ton the cost of steam power is not less than $45. per horse power per annum, with the best boilers and the most improved engines. Very few manufacturers, who have given much thought to the cost of their power, are willing to let it as low as this price, those who do take less, do so under the false impression that they have an excess of power to dispose of costing them nothing in getting. Others arguing that any price for the surplus is better than nothing.

The problem of transmission of power to any considerable distance, with the object in view of renting that power, at a low rate, is only worth considering in conjunction with a first power remarkable for its quantity, reliability, and its cheapness of production. Such seems to be the case under consideration.

Having carefully considered the prospectus of the Niagara River Hydraulic Tunnel & Sewer Co., I am impressed with the feasibility of the proposed plan of using this great water power, which has always attracted the attention of manufacturers. I have not sufficient data to enable me to fully verify all the estimates of the Engineer of the Company, but I can detect no flaw in the argument, as to practicability, and economy, and feel sure, the enterprise, if carried out judiciously, will be the means of presenting manufacturers, with an abundent and cheap power, with a reasonable certainty, that the power can be carried twenty miles at a cost that should leave a fair margin of profit to the Company when offered at less cost than that of steam power generated at the spot, or point of delivery.

While asked to report on the cost of transmitting by electricity only, I feel it my duty to call your attention to other modes of transmitting motion, for the reason that each may have its place in certain cases. If the power of the water is to be used in lighting, then the transmission of the electricity from the Dynamo close to the water wheel directly to the distant city, will be better than the transmission of the required power to Dynamos at the distant place. The question of uses of the power such as driving machinery or hoisting goods in warehouses, as well as the distance spanned in each case will point to the most economic mode of transmission.

[ENCLOSURE]

For limited distances, say five miles, and with right of way secured, motion may be given to machinery in large amounts by the telodynamic transmission of power that obtains in practice in Switzerland from some of their great water falls, and may be worth considering. In this system, small wire ropes made into endless bands, are carried from large shieves over other light easy running shieves to and from the place where the power is needed. Climatic conditions of the Lake district may preclude the use of this system but should it be deemed applicable to any case, the data of cost can be obtained from reliable published reports on the system.

In the case of operating hoisting machines in warehouses, or operating slow moving machines, Hydraulic transmission by means of water under considerable pressure regulated by accumulators has been used to great advantage.

Pneumatic transmission, or compressed air carried in pipes to the distant engines, has been used in many places, perhaps to a great extent at the Falls of St. Anthony, and in some mining operations. It has the advantage of giving to the consumer an elastic gas that can be used like steam in their engines. The extended use of this system has many defects, such as the loss of expansive power, from the loss of heat driven off by compression, from leaks in the pipes and from the cold manifested in expansion &c. Some extended plants for pneumatic transmission are now being abandoned in mining operations for electricity, but the subject is stillworth some attention, in as much as some of the difficulties involving the subject may be overcome. Had I personal control of the problem of transmission as now presented, I should certainly seek such information on the subject as can be got without much cost. Much valuable knowledge on the subject can be obtained from the makers of compressing machines, who have studied the cost of transmission.

In regard to the problem of transmitting power by means of Electricity we are unfortunate in having no good examples to use as data, upon which we can base calculations as to cost. Large amounts of power have been cheaply sent short distances say two or three miles, and small amounts of power have been sent very much farther than is now under consideration. We cannot base our calculations on the latter cases for the reason that with electrical machinery extension in volume or size on any given plan does not with certainty give proportional good results. We have under-stand each case has to be considered in relation to all its conditions and the machinery designed to meet the conditions. We have information enough to point to methods that will accomplish the result with economy even when we assume a large margin for errors.

To go into the subject of giving all the arguments would involve too extended a report. I have carefully gone over the subject in the light of the experience of competent electrical Engineers and have selected the system likely to be the most satisfactory as the basis on which to name cost. The system seeming to be the cheapest in first cost involves so many difficulties in keeping up in all weathers that I have not confidence in its seeming price. A careful consideration of the safest mode of transmission has lead me to the belief that Power in quantities of 1,000 Horse Powers can

[ENCLOSURE]

be carried ten to twenty miles at a cost of from ten to twenty dollars per horse power, according to distance. This price to cover all running expenses except the cost of the power from the water wheel that drives the first generating machine. I do not think there can be any hope of cheaply sending larger quantities of power through one plant, to increase the amount transmitted, the whole plant will be duplicated or multiplied to the extent called for. I consider this an outside price capable of some reduction in practice. The use to which the electricity will be applied will influence its final cost. To make this clear I must call your attention to the cost of steam power. In any large factory it has been found most economical to centralize the power. One large steam engine will in spite of the known loss in transmitting power by line shafting, give a better result than many small engines scattered about the works each driving machines more directly.

Electricity seems to court division, and small motors attached to the machines may do better than a combination of larger motors at one place giving motion to shafting after the manner of the large steam engine. The final cost of the power will depend partly on the cost of the terminal buildings and the care of the plant If the power can be delivered by conductors and distributed in buildings owned by the manufacturer, and if too he is the owner of the separate motors driving his machine the cost of delivery to him will be lower.

I mention this matter of distribution mainly to show how much care must be given to the subject and how much can be saved by wise engineering. Hoping that what I have given you will be of use I would urge your seeking estimates from leading makers of Electrical plants and the submitting the plans and estimates to Electrical Experts and to Mechanical Engineers who have had experience in the transmission of power.

Yours truly,
(Signed) Coleman Sellers.

Form 60.

Executive Office

Western Union Telegraph Company,

New York Nov 4 1882

My dear Mr. Edison:

Permit me to introduce Mr. Henry E. Eardley whom I have long known. He desires to speak with you upon several technical matters, and will esteem it a great favor if you will be able to do so. I shall be greatly obliged for such favors as you may find it convenient to confer upon Mr. Eardley.

Very truly

Eckert Bunnell

Thomas A. Edison Esq.

Orange N. J.

Niagara Falls, N. Y., Novr. 5th, 1889.

William B. Rankine, Esq.,

New York City,

My dear Mr. Rankine:

I have your letter with copy of one from Professor Rowland.

Let us consider some of his statements. He puts the cost of delivery of Electric power from Niagara Falls to Buffalo at $60 to $70 per h.p. "for large powers." Is this true?

The Tunnel Co. will develop 100,000 h.p. at Niagara Falls at a cost of $2,000,000, including a large amount of real estate the revenue from which we will not consider. The fixed charges upon the whole investment will be, say 5% interest - equal to $100,000, or $1.00 per h.p. for crude or undeveloped power.

A plant of 10 Water Wheels of 1000 h.p. each equal to 10,000 h.p. can be placed in a wheel pit and power brought to the surface for $80,000.

The fixed annual charges on this outlay are:

5% on the Capital ($80,000)	$3,000
5% for repairs, &c.,	3,000
Attendance &c.	4,000.
Total,	$10,000.

or $1.00 per h.p. per annum, and a total cost of $2.00 per h.p. on Shaft at Niagara.

Let us consider the plant for transmission of 5000 h.p. to Buffalo to equal a cost of $1,000,000 and we find,

Fixed charges of 6% on capital	$50,000
Attendance &c. (estimated)	25,000.
	$75,000.
Add $2. per h.p. for 8000 h.p. allowing loss of 40% in transmission	16,000.
Total,	$91,000.

which gives us about $11.25 per h.p. per annum at Buffalo. It must not be forgotten that this sum pays 6% on all the capital directly invested in the line and covers operating expenses of the same. This estimate includes the entire cost of right of way to Buffalo, and it follows that the second 5000 h.p. necessarily would cost less than the first. These figures seem to show that Prof. Rowland's estimate of $60 to $70 is entirely erroneous.

From careful investigation we find that the most favorable showing that can be made in Buffalo of minimum ~~cost~~ of steam power is $30 per h.p. This is only attained by large plants working under the most favorable conditions, and the average steam power costs anywhere from $50 to $100 per h.p.

Briefly the conclusions must be as follows:

FIRST: That steam power in Buffalo costs from $30 to $100 per h.p.

SECOND: That the Niagara power transmitted to Buffalo will cost $17 to $20 per h.p. delivered at one or more central stations.

Prof. Rowland refers to the ability of the Brush Company to carry out anything they may undertake and we are

pleased to refer you to an offer signed by the President of the Brush Co., Mr. Stockley, a copy of which you have, stating the r willingness to supply the plant to transmit this power to Buffalo, and guaranteeing results such as I have outlined above.

Prof. Rowland's statement as to cost of local transmission to points within 3 miles of the initial power here is altogether erroneous. Starting at the Company's works here with a net cost of $2. per h.p. the added expense of transmission is simply the cost of wires, and poles or conduits.

In fact the transmission of power for two or three miles on or near our lands is hardly worth considering, as the cost cannot in any manner affect our enterprise. The power may be cheaply transmitted one to three miles by cable and our River frontage is so extensive that 300 Manufacturing establishments can be located upon our lands, receive water from the Niagara River, and have their Water Wheels within a few feet of their doors.

Finally do not let our friends commit the error of determining the value of the Niagara power solely by its possible uses in Buffalo. Such use must and will be large in amount and remunerative, but I make the prediction that there will be a demand for it from all parts of the Country from individuals and firms seeking reliable and lasting power that will build up a revenue which will fully care for the fixed charges upon the capital invested.

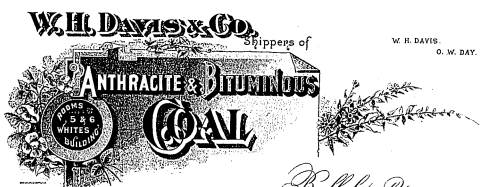
The ability of our Company to supply cheap power, centrally located, with unrivalled shipping facilities, must and will produce satisfactory results.

It may be presumption on my part to criticise the opinions of a Professor of Johns Hopkins University, yet when one seeks the opinion and advice of a person supposed to possess superior and authoritative knowledge upon a subject and finds that person engaged in accumulating the opinions of other people upon which to base his own, it would seem to be a plain confession of structural weakness; at least in the direction of the subject matter under consideration, and any opinion so formed ought not to be valued, as against those of Edison, Brush and others who have made great discoveries in electrical matters and who know from their own practical experience what theoretical men have had no opportunity of learning.

Yours truly,

Charles B. Gaskill,

per A. J. P.



W. H. DAVIS.
O. W. DAY.

Buffalo, N.Y. Nov. 6th, 1889.

C.B.Gaskill.Esq.

Niagara.Falls.N.Y.

Dear Sir:-

Referring to the prices of coal for steam,we can not give you such figures now [for reasons before mentioned] as we think you will want, to contract at;in fact, at this time can not make you price beyond May.1st.on soft coal. On hard coal,price is at mines subject to the conting encies of transportation and mining [ie] strikes and fluctuations in freight from mines to Buffalo and Niagara Falls,which are always the same in these days.

We will make you Anthracite Pea coal at $5.25 at the breaker,and Grate at $1.90 per gross ton. Present rate of freight to Niagara Falls is $2.00 per gross ton,making Pea $2.95 and Grate $3.90,equal to $2.65 & $3.48 respectively per net ton of 2000 lbs.. This price is for one year,subject to above named conditions. We do not look for any material advance in freight from mines to Niagara Falls.

On Soft coal,we will make you price of $1.80 per net ton at Buffalo,up to May.1st.;this is as long as we can make you a price on soft coal at present,but as before stated,we think later on,in the winter,we can fit you out on that coal,(if you prefer Soft.coal) for a year. This price is based on about the quantity you mentioned We would like to figure with you when you get down to business,and want to contract,as we feel satisfied that we can give yousatisfaction,as regards quality & price.

Yours truly, W. H. Davis & Co.

A.C. DC

HAROLD P. BROWN,
ELECTRICAL ENGINEER,
201 West 54th St., New York.

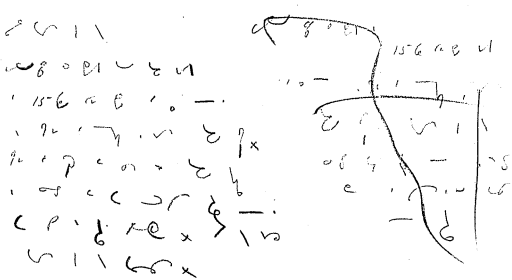
Designer of Apparatus for Special Purposes.
Contractor for Arc and Incandescent
Electric Lights and Steam Power.
Life Protective Apparatus for Arc Light Dynamos.

Nov. 7, 1889. Ans. Nov 11/89

My Dear Mr. Edison,

The London Daily News published on Tuesday an account of the killing of a horse in this city Monday A.M. Yesterday the Westinghouse people opened fire upon them claiming that the report was all wrong. They cabled for confirmation and I was able to send the inclosed in condensed form over my own signature. Is this worth while to follow up in that benighted land? I also inclose some other matters which may be of interest.

Sincerely Yours, Harold P. Brown.



[ENCLOSURE]

HAROLD P. BROWN,
ELECTRICAL ENGINEER,
201 WEST 54TH ST., NEW YORK.
DESIGNER OF APPARATUS FOR SPECIAL PURPOSES.
CONTRACTOR FOR ARC AND INCANDESCENT
ELECTRIC LIGHTS AND STEAM POWER.
LIFE PROTECTING APPARATUS FOR ARC LIGHT DYNAMOS.

Nov. 7, 1888.

Cable Dispatch sent by request to The London Daily News.

Referring to the accident last Monday morning whereby a horse was killed on Fourth Avenue and a police sergeant injured, will say that such occurrences have become very common since the introduction of the high-tension alternating current. The explanation is simple to anyone having experience with the peculiarities of that deadly current. In the first place although it was not at the time raining, everything was still saturated with water; a rusted telephone wire had fallen into the street and trailed against an "insulated" wire carrying the alternating current. The earth connection thus formed was but a partial one and when the horse shod with iron, struck the wire and pulled it taut, his body being more completely connected to earth, shunted sufficient current through it to produce death.

He fell upon the wire and it is not at all unlikely that the contact of the rusted wire against the street car rail may have allowed sufficient current to pass to heat the point of contact and finally produce an arc.

The body of the horse when lying on the paving stones, no longer formed so complete aground connection, and when the driver touched it he received a portion of the current, but not sufficient to produce serious injury. The police sergeant then came in contact with the wire between the horse and the pole and deflected sufficient current to knock him down and burn him. The accounts indicate that he too fell upon the wire and his assistant in pulling him off received his quota.

This may seem improbable to English readers; it did to us at first but there have been so many similar accidents in which the alternating current divided among several living beings from a partially grounded wire, that we know it is only too true. One case out of a dozen will suffice.

On the A.M. of Feb. 6, 1888, before daylight, the driver of a grocery wagon on a prominent street in Buffalo, N.Y., saw his horse fall. He tried to pull his animal up but fatled and struck it with his wet whip, receiving sufficient shock to throw him backwards into his wagon. The ground was covered with snow and wet snow was falling. His cries brought to his assistance Isaac Morton, a porter for the Wagner Palace Car Co., who seized the horse by the bridle and was instantly killed

[ENCLOSURE]

HAROLD P. BROWN,
ELECTRICAL ENGINEER,
201 WEST 58TH ST., NEW YORK.

DESIGNER OF APPARATUS FOR SPECIAL PURPOSES.
CONTRACTOR FOR ARC AND INCANDESCENT ELECTRIC LIGHTS AND STEAM POWER.
LIFE PROTECTING APPARATUS FOR ARC AND LIGHT DYNAMOS.

Subsequent examination showed that a telephone wire had broken, one end falling into the street, resting against an "insulated" wire carrying the Westinghouse alternating current at 1,000 volts pressure. Had it been an arc current in either of these cases the grounding of the wire would have short-circuited some of the lamps and thus indicated to the station attendant that something was wrong; or if an automatic regulator was used, as is generally the case, the voltage would have been immediately reduced and such accidents would have been impossible. With the alternating current, however, there is no means of detecting at the station whether the current passes through converters and lamps or leaks to the ground and returns through a human body and a stray wire.

On my complaint the experts of the New York Health Department made an examination on the night of Oct. 14, 1889, of the circuits leading from the best equipped alternating current station in this city. One end of a spectat voltmeter was connected to earth and the other applied in turn to each terminal of nine different circuits. Four of these were in subways and the others on poles. In every case previous tests of insulation resistance showed very high insulation. But with the Health Department tests a difference of potential of from 180 to 600 volts was found to exist upon every circuit, the average being 460 volts.

This is of course an induced current but it is more than sufficient to produce death in a human being touching a wire while making a ground connection. The armor of the underground cables and the moisture surrounding the insulation of overhead wires formed a conducting path for this induced current. This seems incredible and it would of course be impossible in a short laboratory circuit. But when the wires extend for miles the static capacity may easily become very large. Dr. Hopkinson long ago pointed out the fact that converters were at the same time condensers and might be a source of danger but I think I was the first to show that the conductors themselves might be so regarded. In concluding the report of their tests the Health Dept. recommended that the pressure of the alternating current be limited to 250 volts. It is hoped that this limitation will be adopted since the high tension alternating current has already claimed 40 victims, 11 of whom were killed in the past three months. The London Electrical Review of Oct. 25th has an able editorial on this question. Harold P. Brown.

Tate

Orange Nov 8, 1889

Mydear Sir

I check for England with some doubt as to its Correctness — for we have used less light than in months when bills have averaged $12 to $15.

There has been a leakage somewhere.

Since the accidents by which the Safety fuses were burnt out we have had no light in Lavatory,

For the last three nights the light has been very irregular, used light then low, as if some one were tapping with the voltage. Supposing that your lights were flickering at the same time I have waited Correction

Yours Truly

Henry R Anderson

Thos. A. Edison Esq

Answered 11/89

Form No. 1.

THE WESTERN UNION TELEGRAPH COMPANY.

This Company TRANSMITS and DELIVERS messages only on conditions limiting its liability, which have been assented to by the sender of the following message. Errors can be guarded against only by repeating a message back to the sending station for comparison, and the company will not hold itself liable for errors or delays in transmission or delivery of Unrepeated Messages, beyond the amount of tolls paid thereon, nor in any case where the claim is not presented in writing within sixty days after sending the message.

This is an UNREPEATED MESSAGE, and is delivered by request of the sender, under the conditions named above.

THOS. T. ECKERT, General Manager. NORVIN GREEN, President.

NUMBER	SENT BY	RECD BY		CHECK
57	B.	02	740 Pd	20

Received at DETROIT, MICH. 635 Nov 8, 188

Dated Buffalo Ny 8 9 1

To Thos A Edison

American channel all right up to Buffalo Canadian channel three miles slater and channel safe no traffic or trade from Erie river runs six miles a hour good bottom this is

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THOS. T. ECKERT, General Manager. NORVIN GREEN, President.

NUMBER	SENT BY	RECD BY	CHECK

Received at 188

Dated

To the best right of way over Grand Island can be secured cheap average height six feet part of it twenty feet deep channel given on maps are in fathoms not feet this gives river plenty of depth will report in person Monday C. J. Field

Niagara

WINSLOW, LANIER & CO.
N. Y.

Over

New York, 8th. November, 1889.

Ans Nov. 11/89

Thomas A. Edison, Esq.
Orange, New Jersey.

My dear Mr.Edison:-

The duty on imported cables is 45%. Having had some experience in the importation of cables in this country, I think I can say positively that it would be impossible to get a cable in free of duty for inland use.

Should you desire, giving me the necessary specifications, I can procure, through an engineer in London who has acted for some Companies that I am connected with, positive proposals from the various constructors of electrical cables in England, so that we may know exactly what time and money would be required for this branch of the business. In contracts involving several millions of dollars this gentleman acted as our inspector located at the works, and being a practical electrician having a personal acquaintance with all the manufacturers, his services would be useful and I can have them promptly.

As to jurisdiction in the Niagara River, it has been declared by the Government to be a navigable stream. It would be necessary to obtain the consent from the United States Government

to lay a cable, and also from the towns along the line of the river -the latter necessity being in lieu of the State authority, by reason of the amendment to the Niagara Falls Company's charter, under which the necessary power has been conferred for our action, subject only to the approval of the townships. This latter can readily be obtained at short notice.

Very truly yours,

Edward D. Adams,

Pres.

I cabled Siemens Bros for approximate Estimate on 2500 cable. The prices are rather high when 45 per cent is added & I think they can be made in this Country. I am certain I can make as good cable of the Character we want as the London people. My Engineer is now along Niagara River making preliminary Survey inquiries about Fall, and choosing Site. I have two young men at Buffalo making a Lighting Survey. a Couple of weeks will furnish it, & will show the position of Every kerosene Lamp — gas jet Electric & arc. and the hours of burning this will give us within 5 per ct of Every mans gas bill —

E

TAE- Handwriting

J. D. CONDICT,
40 WALL STREET,
ROOMS 56 & 57.

Ans. Nov 22/89

New York, Nov 12/89

Mr Tate.
Sec of Thos a Edison &
Orange NJ

Ans Nov 17/89

My dear Sir. On Nov 2d I left with you at your Laboratory a sample of asphaltum the result of distillation of Wyoming Territory petroleum, with the request that you examine it and see if you can make use of it for covering electric wires, or for any other purpose. I shall be glad to hear from you as to the result of your examinations

Yours truly

J D Condict

The sample is a mixture of a Oxidized Hydrocarbon & Sulphurous Hydrocarbons = It could be used in Considerable quantity if Cheap Enough for our underground tube material I do not see what other use it could have for insulating purposes = We should be compelled to, tin our ones to prevent action of Sulphur Ordinary Coal tar can be turned into the same character of material by heating with Sulphur & Oxide of Manganese

How much porter delivered last year

ELECTRICITY

Coroner's Office,
67 Park Row,
New York December 5th 1889

Dr. Thomas A. Edison
Dear Sir:

The Inquest in the case of Hugh Harris killed by an electric light current on Saturday last will take place on Tuesday morning at 10 30 in the 10th Ward. If you will kindly testify at the Inquest, you will place me under many obligations.

Very Respectfully Yours
J. J. B. Messemer
Coroner
150 2d Ave.

Electric Wires

Coroner's Office,
67 Park Row,
New York, Dec. 10th 1889

Hy Thomas A. Edison
Orange N. J.

My dear Sir.

Your very kind and highly valued telegram received I regret exceedingly that you cannot testify before Dr Carnochan at the Harris inquest because I am sure your testimony would be very valuable and instructive and would no doubt throw much light on the question of electric Wires.

You say in your telegram that you have written me the reason why you cannot testify

I am anxiously awaiting that letter.

I thank you very much for your courtesies and courteous offer to kindly send Mr. Kennedy, your assistant. I would say that I have no funds at my disposition to pay experts fees, and do not know if Mr. Kennedy will testify at the Inquest on question mates.

I would have answered your telegram sooner, but thought I had better await your note explaining the reason why you cannot testify in the case.

The inquest has been adjourned to morrow morning at 11 o'clock.

Very Respectfully, yours

J. J. O'Meara

Coroner 150 2d Ave

Elec. Wire

Form No. 1.

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This is an UNREPEATED MESSAGE, and is delivered by request of the sender, under the conditions named above.

THOS. T. ECKERT, General Manager. HONTH GREEN, President.

NUMBER	SENT BY	RECD BY	CHECK
22	EJ	Bm	1 Paid 1.20

Received at ..... N.J. 2 Dec 11 188

Dated Newyork 11 2 11 P

To Mr Thos A Edison

Orange NJ OK

Please send your assistant to Superior Court - Post four no Corporation.

M. J. B Messimer Counsel

Thomas T. Hargis. Geo. B. Easton.

Law Offices of Hargis & Easton,

Rooms 33 & 34 Bull Block,

Louisville, Ky. Decr. 16, 1889. 18

Mr. Thomas A. Edison,

New York, N.Y.

Dear sir:-

We are attorneys in a suit in this city which involves first, the danger to life and property from the single trolley wire overhead electric railway system, pressure five hundred volts. Second, the practicability and possibilities of the conduit or underground and the storage battery electric railway system. Would you be willing to give us your deposition as a scientist on the subject, which will involve many of the points touched by you in your November Article published in the North American Review as the electric lights are in use in this city with their wires crossing and recrossing the trolley wire of the railroad, the electric wires having a pressure of from one to two thousand volts. The telephone wires also cross the trolley wire of the railroad and run parallel with it in many places. The electric light wires and telephone wires were put up first and have precedence in point of time over the trolley wire railroads of this city. If you will agree to give us your deposition in the case we will at once send forward the interrogatories to an attorney (Gen. Pryor) so that we can have your answers. A brief answer to this letter indicating your views on the above questions, especially that of danger to life and property from the overhead trolley wire

Thomas F. Hargis. Geo. B. Eastin.

Law Offices of Hargis & Eastin,

Rooms 33 & 34 Bull Block,

Louisville, Ky. 18

electric railway system crossed by other wires and so conditioned as to be by accident at any time brought into contact with them, will very much oblige us, and enable us to know whether we should take your deposition or not in the case.

We will of course expect to take your deposition in the usual way and under such terms as are usual with experts unless you object thereto.

Very Respectfully,

Hargis & Eastin.

Dictated by H

WINSLOW, LANIER & CO.
N.Y.

New York, 19th. December, 1889.

Dear Mr.Edison:-

I send you herewith the latest report, that of Dr.Coleman Sellers, upon the Niagara project, for your information.

Sincerely yours,

Edward D. Adams.

Thomas A. Edison, Esq.

Orange, New Jersey.

[ENCLOSURE]

3501 Baring St.,

Philadelphia, Dec. 17th 1889.

Ed. D. Adams, Esq.,
17 Nassau Street,
New York.

Sir:—

Having viewed, in company with Mr. Albert H.Porter, the lands at the option of the Niagara River Hydraulic Tunnel, Power and Sewer Company, incorporated by act of the New York Legislature, passed March 31st, 1886, and considered the proposed tunnel as designed by Mr. Thomas Evershed, C.E., I offer the following report as to practicability and cost of the enterprise.

The plan of utilizing the power of Niagara river, in buildings to be erected on the property of the Company above the upper Rapids, by means of a tunnel or tail race from the property to the bank of the river below the falls, as explained in the pamphlet issued by the Company in 1886 and fully described by the then Division Engineer of the State of New York Mr. Thomas Evershed, C.E., and indorsed by Mr. Elnathan Sweet, the State Engineer and Surveyor, is one that commends itself as feasible, and no exception can be taken to the general plan of the project as presented by the proposer of the scheme. The question as before me is one of mechanical engineering, and finding no accurate surveys upon which to base an estimate of cost or any details showing distribution of powers, I look upon Mr. Evershed's presentation of the case as expressive of an idea and not as the perfection of the engineering scheme

[ENCLOSURE]

after the project should have been accepted by capitalists and the work put in hand.

In the absence of a perfect topographical survey of the location, I have been obliged to seek such information as can be obtained, apart from my personal observation of the land and the geological formation of the rocks underlying the surface of the ground, as exposed in the vast cut made by the falls during many past ages;

1st. To the reports of the geologists who have considered the interesting problem of the recedence of the Falls to the present site:

2nd. To the testimony of persons who have been engaged in tunneling or making hydraulic canals in the immediate neighborhood:

3rd. On the records of the Hydraulic Canal Company, more particularly as they relate to the fluctuations of the surface height of the river at the mouth of their canal at Port Day, for which information I am indebted to Mr. W.C. Johnson C. E., engineer of the Hydraulic Canal Company.

4th. To Mr. David Philips, who has furnished me with the account of the rocks passed through in boring a gas well on the property of the Company, and who is at present engaged in building a canal on the Canadian side of the river for the Water Works; who has had to do with the tunnel at Lockport and who has noted its durability under similar conditions as will obtain here; who has had constant employment about the falls, making him a valuable and reliable authority on matters connected with the rise

[ENCLOSURE]

and fall of the river both above and below the falls.

5th. On the corroborative testimony of the residents of the locality. Among these I may mention Mr. N.S. Ware, familiar with wells on the site of the proposed work; also Mr J. Hogan who has knowledge of the wells sunk in his time.

6th. To Captain Charles B. Gaskill for the conditions obtaining in the mill sites fed by the Hydraulic Canal. With Captain Gaskill visit was made to the wheel pit of Messrs. Showilkoph & Mathews mill built in 1876, taking power from the Hydraulic Canal Co. Also to the base of the cliff at the head of the lower rapids, where the "shale" can be seen and examined.

7th. To Mr. A. C. Rice, Consulting Engineer for Messrs. Stilwell & Bierce Mfg. Co., for much valuable information in regard to the action of turbine water wheels under high heads.

8th. To Mr. Alexander J. Porter for survey and soundings of the river.

9th. To Mr. Albert H. Porter who showed me the lands and who has rendered me valuable assistance in the prosecution of this investigation, and who impresses me very favorably as to his knowledge of tunneling, from his connection with the work on the New York acqueduct.

Starting with the idea that the first outlay should economically open up property capable of giving space for the buildings that could use to advantage say 20,000 horse power of the 120,000 H.P. assumed as available, I have located the first canal on the property of Mr. J. Binkley, the line running south 10° 15' west magnetic meridian, and

[ENCLOSURE]

passing 12 1/2 feet west of Mr. Binkley's house, the profile of which locality has been furnished by Mr.W.C.Johnson C.E., and herewith given, marked A.

Maps of the location furnished me upon which the many cross canals have been placed, are misleading as they are predicated on a great amount of filling, for which filling I can see no material available at the present moment. I also object to the extent of filling as not conducive to free water supply to the canal, without danger of cutting off from the Hydraulic Canal Company. Finding the land between Buffalo Street and the river bank too contracted for the purpose, I have asked for optional price of the land between that street and the line of the railroad. Papers marked B, will cover the plan of the proposed additional ground and the prices asked for the property. In my estimate of total cost I include the cost of this land. The proposed canal will lie about 6,020 feet above the mouth of the tunnel and the property at the option of the Company extends so far up the river as to enable five other canals to be located, the last one being 6,600 feet above the one under consideration.

Assuming 90 feet head to be the most economical, but leaving room for the use of 95 feet head if wheels can be obtained to work economically at the pressure and velocity due to that head or fall, I have changed the grade of the main tunnel from a fall of one foot per hundred as laid down by Mr. Evershed to 7/10 of a foot to the hundred, nominally to a slope of .007. I maintain this grade or slope up to the canal under which lies the first cross tunnel,

[ENCLOSURE]

and having found that the constant decrease of water warrants the change, I have adopted a slope of .005 as the bottom grade of the remaining 6,600 feet of the main tunnel. By this means I obtain a uniform 90' to 95' head over the whole land. From the first cross tunnel, that is to say from a point 6,020 feet from the mouth of the main tunnel, the same size of cross section will be maintained up stream for a distance of about 1,350 feet, to the second cross tunnel, which tunnel will accommodate 24,000 horse power, and after this amount has been disposed of, the main tunnel will decrease in size in sections of 1,350 feet until the last section is reached, when the area of the tunnel, will be decreased from 572 feet to 201 feet area or from a 27 foot tunnel to one of 16 feet diameter, the cost of each section being less than its predecessor, while the value of the building sites will be uniform, so far as head of water is concerned and more valuable as being near to Buffalo and farther from the dangerous part of the stream.

In my treatment of this subject, I have had to take into consideration the nature of the rock through which the water will pass, and in considering the use of water under a head of 90 feet at least, I have based my calculations of volume on the loss in transmission from the wheel to the surface and aim to deliver each 1,000 horse power block in such manner as to give that power at the first Jack shaft in each mill. In diminishing the slope from that proposed in the estimate of the designers of the scheme I have endeavored to keep down the cost of construction by adopting a new system of surface canal that will so much lessen the

[ENCLOSURE]

cost of construction as to make the larger section of tunnel required for the system, taken in conjunction with the canal and cross tunnels, no more costly than the smaller section on the maps furnished me in connection with the system of cross tunnels and canals there given.

A careful examination of the location has forced upon me the conviction that the main tunnel will pass through the shale that underlies the hard limestone rock, and which, while worked with more ease may be considered less able to stand without lining. From an examination of this shale and the concurrent testimony of those who have worked it I find that its name is misleading. It is, in situ, a hard rock capable of standing a moderate velocity of current and yielding only to the operation of frost in conjunction with moisture. If, as I suppose will be the case, the mouth of the tunnel will be wholly or in part in this shale I propose to protect it by masonry at the portal and to keep out frost by closing the portal by gates that shall extend as low as the water line of the outflowing water. By this means the tunnel will be subjected to the action of water only, and that at such velocity, as has been found not destructive to the "Shale".

The rock formation through which it is proposed to carry the tunnel is the same as has been laid bare by the gradual recedence of the falls to their present site. We know that this rock does yield to the action of the elements, but the mind is staggered in contemplating the ages required to carve the river bed out of such material.

Those who live close to the mighty torrent and have

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been used to watching the action of the water, can see but little change from year to year. Careful surveys made at intervals have demonstrated, that in the most concentrated current of the Horse Shoe Falls, the wear has been so much as to carry the edge of the fall back 160 feet in about 33 years, but the recedence of the breast of the American Fall has been less marked, and what is to be particularly noted, the recedence of the bluff of Goat Island is quite as great as that of the bluff of the American Fall From this we must infer, that frost and moisture have had more to do with the destruction of the rock than the force of the water alone, as the frontage of Goat Island is not subject to water wear.

The more than 4,000,000 horse power representing the power of the fall in water as it passes from the site chosen for the present enterprise to the river below the falls, have with the water, carried rocks and ice, to help in the wear of the natural dam, but the cold of the northern winter has done the most damage in following the moisture as it penetrates the surface of the softer rocks and shale. It is this frost action that is now at work disintegrating the exposed shale so slowly as to be little noticed.

In taking the water from the river to each wheel pit by canal I have assumed a velocity of only 1 1/2 feet per second and given a section to the canal at its mouth sufficient to deliver the amount of water needed to develop 20,000 horse power along the length of the canal. To diminish the cost of construction of this canal I diminish its

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cross section as it advances into the land, so that from a mouth 120 feet wide, the last mill site is reached with a width of canal of only 24 feet. This plan being carried out with all the canals will make the mill sites between the canals available for mill construction greater in length as they recede from the river.

The water carried to the wheel pits at a moderate velocity is carried to each pair of wheels in flumes of ample size, so that velocity of current exists only where it can do work, namely, in the metal case of each turbine wheel. From the wheels the current is lessened to the main tunnel where it passes at a mean velocity of 25 feet per second through the same kind of rocks, that show so little wear at the falls, where to enormous velocity is added the action of frost. The water passing through this tunnel is freed from all the rough matter that helps to slowly pound the rocks of the falls to pieces and is also protected from the frost of the cold winters.

I have spared no pains to assure myself of the lasting qualities of the rock and shale when protected from frost and refer to the authorities quoted at the beginning of this report. I do not give detail of the statements made by the persons who have the broadest experience on the subject, who have noted the action of water under the conditions that obtain in the present enterprise, but feel certain that the shale will wear well and <u>need no lining.</u>

The section of tunnel proposed is that commonly adopted on railroad work. The shape being that of a horse shoe, the top arch being semi-circular of 15 feet radius;

[ENCLOSURE]

width at base of the arch 30 feet; the sides will slope from a width of 32 feet at floor to 30 at the spring of the arch and height of the sides about 7 feet 6 inches, while the floor will be curved to a central depth of 1.5 feet. See drawings C, accompanying this report. The total height of the tunnel will be 24 feet, the area being equal to that of a circular tunnel 27 feet in diameter. All the tunnels will be of similar form, but will be mentioned (in speaking of size) by the diameter of circular tunnels of equal area.

The first cross tunnel will begin with 15 feet diameter and end with 10 feet diameter, while all the inlets from the wheel pits will be equal to 6 feet diameter circular tunnels. The 6 feet openings from wheel pits have been lengthened to the manifest saving of the volume of the cross tunnel as is shown in the drawing accompanying this paper marked D, showing sections through wheel pits. It is proposed to work this main tunnel with four breasts requiring two vertical shafts one at the upper end 6,020 feet from the mouth, and the other on the property of the railroad say 2,640 feet from the mouth; 1,320 running feet of the excavation will be thrown into the Niagara river below the falls, about 3,010 running feet will be taken from the first shaft and by overhaul costing say $22,000. will be carried to the property of the Company and be used in making land, as will also the remaining 1,990 feet delivered from the upper shaft, the latter without cost of overhaul. If it is found desirable to shorten the time of tunneling a third shaft can be driven and two more breasts

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worked the cost being perhaps $15,000. for such shaft. This, however, will somewhat reduce the overhaul cost. I advise the two shafts only.

For the tunnel proper below the first canal, which must be made large enough to develop the whole power required, the cost will be as follows:—

Open cut at the mouth,	$23,000.00	
Driving tunnel,	702,180.00	
First shaft,	16,600.00	
Second shaft,	14,200.00	
Overhaul,	22,000.00	
Masonry at portal &c.,	10,000.00	$787,980.00
Cost of 1st cross tunnel,	22,242.00	
Outlet tunnels 6 feet each,	5,352.00	$27,594.00

Cost of first canal 120 feet wide at mouth 20 feet deep the water at ordinary height being 16 feet deep and flowing at speed of 1.5 per second.

Rock excavated from canal,	$44,000.00	
Earth cut,	7,000.00	
Cut in river,	30,000.00	
Rock cuts to pits,	1,500.00	
Stone work on canal,	40,000.00	
Dressed stone at gates,	10,000.00	
Coffer dam at mouth,	10,000.00	$142,500.00

In sinking one pit to each two mills and bringing the ropes from the wheel drums up into each mill site the operation of each mill will be separate from the other but co on-

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omy of construction will be reached.

10 pits will cost,	$157,500.00	
Brick lining of pits,	25,000.00	
Stone at top, &c.,	25,000.00	$207,500.00

Bids having been asked for wheels to give the power in blocks of say 1,000 horse power to each wheel under a head of 90 feet, I have based the cost of placing 10 pairs of wheels in the 10 pits, selecting data from what I consider a high cost. 10 wheels to deliver 1,000 horse power from each shaft 20,000 in all:

10 double wheels, ...	$150,650.00	
Cables to surface to first jack shaft, ...	14,350.00	$165,000.00
To cover the whole cost say, Land at option, rights, &c., as given to me by Mr. Stetson, ...	$515,000.00	
Estimate of proposed additional land to give sufficient length to the first canal,	36,000.00	$551,000.00
Interest during construction, and incidental expenses,	85,000.00	85,000.00
Main tunnel, ...		787,980.00
First cross tunnel, ...		27,594.00
Canal and masonry, ...		142,500.00
10 pits, ...		207,500.00
Wheels and cables, ...		165,000.00
Total cost,		$1,966,574.00

This sum which covers the whole cost of developing the first 20,000 horse power that can be rented, also covers the cost of all the land and the most costly part of the

[ENCLOSURE]

main tunnel and applies to the reduction of the cost of power of all other mill sites on the land of the Company. The total cost divided by the horse power developed now, say by 20,000, shows that each horse power will cost the Company only $88.80 power to the amount of 20,000 H.P. rented at $5. per H.P. per annum will pay the interest on the whole investment and all, receipts beyond that price will be profit. The value of the investment, is however, better shown by the still further development of the scheme If a second canal be built and the main canal carried to it, the cost of such construction on the basis of the first estimate, that is, not counting the gain to be made by the Company using their own power to drive the work which use of their own resources I feel sure will reduce the cost of the constructions at least 1/6, we have.

Main tunnel, ...		$135,000.00
Cross tunnel, . . .	25,000.	
Outlet tunnels, . . .	6,500.	31,500.00
Canal, ...		180,000.00
12 pits, ...		250,000.00
12 sets of wheels, ...		180,780.00
Cables, &c., ...		17,220.00
Incidentals, ...	5,000.00	$889,400.00

This sum divided by the 24,000 horse power it represents makes each H. P. = $38.00 or reduced one-sixth by reason of the use of the power at command of the Company, we have a cost per horse power of about $32.66 as $1.63 per H.P. for 24,000 H.P. will pay the interest on this, all

[ENCLOSURE]

rental above that price will be profit.

In estimating the cost of this work, I have taken figures that will cover adverse conditions not likely to be met with in the prosecution of the enterprise. From those familiar with the ground about Niagara I find the water is obtained at from 20 to 25 feet, and that below 30 feet the rock is tight. The water found in digging wells on the property of the Company has been reached at or before the depths named, and the record of the boring of the gas well showed the solidity of the rock below 30 feet. The nature of the rock formation is favorable to the construction of an unlined tunnel. The stone lies in almost level layers and can be taken out to leave a comparatively smooth wall and regular floor. In calculating the capacity of the tunnel I have worked with Kutter's formula taking as the value of the roughness of the walls the co-efficient for "rubble" n= .017 checking the calculation by the formula of other engineers and assuming a roughness with such formula of n .02.

Nature in offering this great water power has placed it where it can be taken advantage of at low cost. The dam built by other than human hands, is for all time so far as this property above the rapids is concerned: The rocks lie ready to afford a smooth water way upon removal and furnish the defence against wear. Authorities differ in the estimate of water passing down this river, Mr. Dwight estimating as high as 361,392,742 cubic feet per minute; Mr. Perkins as low as 5,087,535 cubic feet per minute; and

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Mr. Darby assumes 27,878,400, while Mr. Barrett has by three observations reached the amount of 19,500,000. An average of all four gives over 103,000,000, while the average of the estimates of Mr. Darby with that of Mr. Barrett gives us 24,000,000 to draw from. If this Company prosecutes its enterprise and succeedds in developing 120,000 horse power and can rent that much force they will then be drawing from the mighty stream only 970,000 cubic feet per minute a matter of .04 per cent of the lower estimates of volume. So far as the appearance of the great Water Fall is concerned the water taken by this and other industries such as the Erie Canal and Hydraulic Canal and the present enterprise, will not be noticed. Variations in height of water from the action of the ice, winds, &c. make from time to time changes so vastly greater than this amount, without seemingly detracting from the wonder of the world.

The value of water power as compared to steam power has induced manufacturers to go to vast expense in building dams on rivers and developing power by artificial means that require constant attention and heavy expense to maintain. The scattered powers afforded by the rapid flowing rivers and by mighty springs particularly in the south have been attractive inducements to manufacturers to seek such water powers even at distance greatly removed from trade centres.

The property at the option of the Niagara River Hydraulic Tunnel, Power and Sewer Company extending for a

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distance of over eight thousand feet along the river bank can be very much increased in area by the material taken from the excavations and will also be able to furnish much valuable building materials for the mills. Beyond the Railroad that bounds its land on one side lies an immense territory for the dwelling houses of those employed, and presenting building sites attractive and healthy. The railroads and canals besides the river navigation offer facilities for transit unequaled by any approximately similar enterprise.

Those interested in this attempt to use the power of Niagara have the example of the Hydraulic Canal now worked to its utmost present capacity to judge of the relative advantage of the two systems. The Hydraulic Canal carries the water to the mill sites below where this tunnel will discharge and that at a great cost in surface canal more costly in construction and maintenance than unlined tunnels. The low cost of power obtained from the said river by the present enterprise must for many years be a bar to the profitable enlargement of the Hydraulic Canal when the value of the property for mill sites on the bluff are taken into consideration.

The digging of this one tunnel up to the first surface canal will offer mill sites and power at lower cost than any location now known. A rental sufficiently attractive to bring manufacturers to the place will pay a handsome profit on the investment while the extension of the enterprise to its completion, will add vastly to the

[ENCLOSURE]

profit even if that profit is not increased by the transportation of power by known means to more distant localities.

For the purpose of the present estimate the surface canals have been placed 1350 feet from each other, but the problem is one that should be carefully considered in relation to the kind of industries and the yard room required by each, before the ground is laid out. Buffalo Street passing diagonally through the lands may perhaps require re-locating but the present estimate is based on its remaining as now located. I can see no reason why it may not be made to serve as one of the many streets in the great manufacturing town proposed.

The uniform distribution of power of 2,000 horse power to each wheel pit and the carrying of this in blocks of 1,000 H.P. to each of the mill sites one on either side of the pit, will enable the property to be rented to advantage even to small users as the rope transmission in some cases will enable whole rows of small industries to take the place of any one large factory.

If the present report results in the prosecution of the enterprise I feel sure that careful consideration of each of the many considerations that go to make up the whole will result in a very marked reduction from the present cost as estimated.

The limited time at my disposal has made me reluctant to advise alternates from the plan submitted that may make reduction of cost by exchange in the location of the

[ENCLOSURE]

main tunnel. It is now placed as near to the line of the railroad as possible, but should it be located about 200 feet nearer to the river bank the cross tunnel will be shortened that amount and the six feet tunnels to the main not much increased. Such change of location would save at least $2,000.00 for each cross tunnel and may be very well worth considering. The change however cannot be at present recommended as the careful consideration of this and other plans to reduce cost will keep back my report, when its main features are so much needed. Hinting at such methods of reducing cost I now conclude this stage of one of the most interesting engineering problems ever given me to consider.

Very respectfully,

Coleman Sellers.

20000 H.P.

Niagara to Buffalo

Dynamos High Lmi —

2 250 horsepower, making 500 hp together coupled & driven by Ropes — allowing plenty ropes and Extra large shafts to prevent torsion as but 57 @ 60 amperes pass Brushes Commutator Brush need not be large

New Type dynamo; wire on armature about probably 60 rubber Covered or The conn covered with 4 or 5 times the thickness that the jumbo bars are covered. and the wire having hard rubber between each and Jumbo paper between each layer in addition soaked in Olbb the Non-inflammable material we have. Commutator bars wide apart & Jumb paper used in addition to the quadruple wire that used on Municipal Thin Copper wire connections from Commutator Iron ring of armature or wooden hub as in new machine which gives extra insulation. Commutator only being for 50 amperes Could be also thoroughly insulated from Shaft by Couple inches of Wood made in many pieces all wires leading from brushes including Brush holder covered with hard rubber put on as is done by Hard rubber Hammer Co — or Celluloid might be used —

If flexible wires used double full x 66 rubber tubing Can be used — Base of Dynamo must be insulated from Earth to measure megaohms — bolts must pass through Hard rubber bushings with large surfaces: wires from Dynamo shoved up upward towards walls to suspended System all of which is covered with at least 16 hard rubber or double flexible tubing

"Field Magnets should be wrapped 1/16 thick with gumbo paper & wire rubber insulated, it will be large wire say No 8. as it is to be worked by separate dynamo —

All switches that are used to disconnect dynamo must break through at least Six contacts in series and Extra Resistance at each dynamo may be regulated to reduce current almost to point of making it water before throwing dynamo off —

Each Dynamo or pair of Dynamos must be arranged to be Raised from Sole of Frame & get up to speed by the gradual action of a friction clutch & when up to speed locked by a pass lever lock to the driving pulley & then thrown into Circuit. Its field being previously Energized by being put in Contact with the field Circuit which Comes from the main regulating Station,

Information must be obtained from the Water Engineers as to the maximum they propose to furnish them shaft. 2500 hp on Each shaft would be better than 5000 + 1500 would be better still for our purposes. or if they could give us 1000 hp unit where we could Control the water wheel

It would render unnecessary all the Clutching etc, We could start the wheel with its pair of Dynamos of 1000 hp get them to right speed + throw them on mainline with 20000 hp. There would be 20 such units perhaps 20 shaft holes in the rock would be too Expensive. ~~If two such further could go into 500 hp units which we could use.~~ But we should do away with Rope driving as we could connect a double Dynamo at Each End of the water Wheel shaft + Gearing driven in the mide providing the Speed could be got high Enough - 300 Revolutions per minute, The Dynamos Armature 6 or 7 feet in diameter. Multipolar Dynamos —

At Buffalo The Motors are double Connected ones both Coupled together + in Series for the 6000 Volts, The Local Dynamos are Connected direct to the shaft one on one End + the other on the Opposite End —

A Local Dynamo with a current around to all Motors serving by a switch to start all motors + their Dynamos from a slow rest to proper speed so they can be thrown in current after this the Local Dynamos Can be thrown in

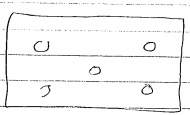
all the fields of the motors are wound with large wire. Each pair of motors have their fields in parallel & then all multiple arced to the local Dynamo which is regulated by its field - an independent Regulating resistance is connected in each field so all fields can be balanced & also to disconnect gradually to prevent disruptive sparks. The Local Dynamos may be regulated in the usual manner as in lighting

There will probably be 3 stations in Buffalo, from which proceeds the regular 3 wire system and a two wire system of 600 to 700 volts for power. — Part of the Dynamos are wound for 3 wire & part for 600 to 700 volts according to demand,

The main from Niagara passes through Niagara Village overhead to the outskirts of Buffalo thence underground to the 3 stations one after the other & a vacant lot is bought at Echange & of line on opposite side of city — in the Centre of which is Excavated a Cellar like place, say to Wales

5

~~Lime, Cinders & about an Inch~~
~~Inches This is to Stand good Coke about~~
~~one foot thick with sheets of Copper~~
~~16 thick set Edgewise up~~ over the whole
~~of this is laid sheet Copper 16 thick~~
~~Cover this is thrown one foot thick of~~
~~Coke & then filled in The Copper Being~~
The Lot shoned be at least 100 by 100.
or 4 City lots, 5 Hales shoned be dug



~~These Hales shoned go to the water~~
~~line, and be 20 X 20 — in the Bottom~~
~~Sheet Copper shoned be placed 16 thick~~
~~& all Connected together with a~~
~~Number of small wires Braged on~~
~~which wire shoned be three times~~
~~the Cribbage of the main & all connect~~
~~with it — over this Copper shoned~~
~~be thrown two foot thick of Coke~~
~~& then filled in — This shoned be~~
a man hole perfectly dry into
which the main Comes & also the
ground wires & into which a man
Can go with Safety —

If it is found that there is not room available in the Buffalo stations to connect the local dynamos direct to the motors shafts a belt could be used or preferably rope could be used & dynamos put up stairs, on the other hand half They could be connected direct as before & half of them Motor & Dynamos kept downstairs & ½ up stairs the Iron Beams could be strengthened,

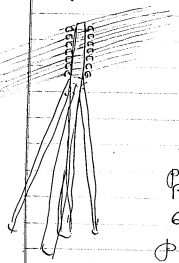
It is proposed to take 20000 hp to Buffalo & sell as much for light as possible and the balance for power all motors below 5 hp being put on Light ckt across the 220 Volts, & anything above this on the special power ckt =

Edison tubes & general device for 3 wire light and Siemens Cable for 600 Volt power ckts,

Pole Line from Niagara. two line of poles. Earth used as return, poles wood, 40 feet high, all other wires must go underneath,

7

wire ¼ inch diameter hard drawn
80 poles to the mile —



English Ordinary Telegraph Heavy Special Poles

House over each set of Insulators sufficient to keep them perfectly dry —

Poles 12 inches at the top.

Brace poles 30 @ 32 feet long 6" at top,

Poles must be 45 instead as 40 above stated as they must be 5 feet in ground —

Brace poles 4 feet against a Chestnut plank at bottom of hole —

Everything must be Calculated so that if Each wire is coated with 2½ inches of Ice & the wind is 60 miles an hour the factor of Safety must be at least 4.

No trees or other things must come so near that they will fall on the Wires if blown or cut down

~~The two sets of poles must be 12 miles~~ the must run by different routes

+ Form at the
The underground of 5 miles for Buffalo
on high tension —
The underground is composed of 8
Separate Cables; Each insulated with
Hooper rubber in 4 layers then taped
hand with a good tough tape ⅛ thick
the Covered with ¼ inch of harder
soft rubber in several layers ~~of~~ (Four thicknesses wound ¼ inch insulation vapor tight side by side)
then laid in Iron troughs porcelain
lined. ~~The~~ Each Cable raised from the
bottom by a strip of porcelain. then
when all are say 3 inches apart the
whole trough is filled with an asphaltic
Compound poured hot + the depth of
trench being not less than 6 feet.
The temperature must never cause the
Compound to get brittle. The top of the
box is then put on with rubber gaskets.
+ the whole sealed over with molten
asphaltic Compound. The underneath as
well —
The Manholes where the tap is
taken from the high main must be
of brick of ample dimensions - perfectly
dry and the working platforms
suspended from above on hard rubber
pillars -

9

at outstants at Buffalo where underground communication

~~Every 20th pole or 4 per mile~~ must have a House built around it like a signal tower. in this house. Every wire must be connected together & to ample lightning arrester, with air space, & good copper ground. The same at Niagara, & a person must be in charge of Each. The Choking effect of the Dynamos at Each End will Cause the arresters always to work — There should be a Quadruple set one being in position & when burnt out the attendant from below should be able to turn a rod & throw in another.

The method of starting a factory motor at Niagara in a mill is shewn in a drawing —

Niagara Dynamos 500 hp electrical 8.000
Buffalo Motors 500 " 8.000
Buffalo power Dynamos. £ 8,000
or $16 per horsepower, not including field charging
Dynamo with spare, + rotating Dynamo with spare
at each station + at Niagara it doesnt include field
Dynamo — The cost of these will be at Niagara
$1 per horse power, at Buffalo about 150 as there are
3 Stations, Cost of rotating Dynamos at each
station or $600. for whole station.

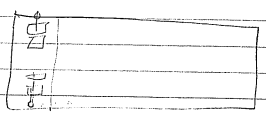
Rough estimate Cost Niagara 4 stations for
20000 hp for Buffalo alone.

Buildings 1 story brick plain roof 75 feet wide,
Each bldg 150 feet long — at $55 per foot whether cost
of Enough bldg $ 33,000.
Foundations for 40 dynamos, at $300 each
$ 12000 - Cost 40 Dynamos of 500 EHP.
Exct at 16 & 1 for field 17 per HH.
$ 340 000 — Belting or rather rope. $ 250 per machine —
$ 10.000 — Clutches $500 Each $ 20.000.
Switches, Indicating apparatus Regulating Recalimers
$ 12000. wiring stations $ 8000. Labor erecting.
$ 10.000 — Fitting up Regulating office $ 8.000.
Poles + wires from 4 Stations to Regulating
station 1/2 mile being Extremes $ 17000.

Earth wire at Niagara with manhole etc. $4000—

Buffalo. 45 Motors at 8000. $360 000.
90 Single Dynamos 4500 $405,000.
Regulating Dynamos at 1 per h.p 20,000.
~~Earth wire~~ Motor Mains, for
10000 h.p. —— $250,000.
Mains for Electric light & small power $450,000.
Apparatus to ~~be set~~ at 3 stations,
$15000 Each $45,000.

Cost poles $60. $135,000 —
Cost 5 miles underground High volt $5 foot $130,000.
Cost Ground & real Estate. $12,000.
Cost 3 Buildings & ground.
$25000 Each $75,000.
Cost right of way $25,000.



15
20
500

166. 166 / 2000 / 12.
166
340
332
178

30 double Dynamos,
1000 hp 12 V 14

14
30000
420000

Total

Niagara 4 stations one station

Bldg -	33000	38 000
foundations dynam	17 000	20 000
Dynamos & field D-	340 000	36000 hp @ 14 per hp 304 000
Belts & Gearing & shafts & pulleys & locks	10 000	30 000.
Clutches	20 000	
Insulators.	15 000	
Wiring station.	18 000	
Leads	15 000	15 per loss
Regulating office & fitting	12 000	on Conductors
Power from stations to Reg 0	17 000	amount leaving Dynamo at Niagara 33,120 hp
	470 000	

33000 hp

Overhead Water or Shaft connection

at Motors at Buffalo -

3 Stations at Buffalo with 10000 hp 600 Volt motor. net on Generators belt + 10 000 hp 3 wire Light.

150 000 feet net on Generators house

Motors.	392 000	369 000 28000 hp
Dynamos	364 000	405 000 26000 hp
Reg Dynamos	20 000	20 000
Motor Mains	3 stations - mile apart or 2 miles duplicate	300 000.
Light Mains	1/2 mile apart 1 mile duplicate	450 000
apparatus	50 000	45 000
Poles Line	220 000	206
	150 000	197 000
Underground	150 000	170 000
	12 000	14 000
	20 000	20 000
	182 000	204 000

1707000

Cost Buffalo 1.707.000.
Niagara — 470,000.
2.177.000.
Wire forgotten 118.000
2,295,000

10000 hp of light is only sold on average of 3 hours, at 1.25 per M which is lower than gas at Buffalo I believe, the receipts would be 21 Cents per day per horse power for 312 days which would be 65.52 per year per horse power deducting 12 Lamps at 37 Cents Each or 4.44 leaves 61.08. for each horse power. or $610,000 — gross. The 10000 hp sold for power. Charging. 25 per year for all under 50 hp and from 50 to 100. charge $15. and from 100 to 200. $12. and from 200 to 500 $10 — would clap all from using Engines — Say average price obtained was for 10 hours. $13. This gives 130 000 gross which added to Light 610 000 130.000 740,000.

312
21
312
624
6552.

12
52
624
3744
4448

6552
4448
6108

61
10000
610000

Expenses at Niagara.

Day run.

12 Tenders	@ 600 yr	7,200
2 Regulators	800 yr	1600
4 Mechanics	1000	4000
4 Electricians	1500	6000
1 Chief Electrician	4000	4000.
1 Master Mechanic + Gen'l Mangr.	4000	4000
8 Oilers + Laborers	500 yr	4000.
Oil.		5000.
Waste.		1000.
Brushes.		1000.
Repair Materials.		5000
Night run two stations		
6 Centers.		3600
2 Reg		1600
4 oilers + Labor.		2000.
1 Night Electrician		3000.
		53 000

Depreciation 470 000

at 3 pct.	14,000.
Taxes	5000.
Insurance .75	3,500.
Extras.	5000.
	80,500.

Expenses Niagara station

7.4
3000
7.4
3.7

15

Expenses Buffalo -

Day Runs.	Day	Night
1 Electrician	4,000	
1 General Manager	6,000.	
3 Under Electricians,	9,000.	9000
3 Mechanical Supts.	4,500	
15 Regulators.	4800	4800
15 tenders. oilers etc	9,000.	9000
15 Laborers -	7500.	7500
4 underground men in city	3600.	
1 Underground Supt. "	2000	
6 Meter men at station.	3,600	
6 " outside	3,000.	
3 Collectors.	2.100.	
4 Bookkeepers + Chief	4,300.	
4 Lamp boys	1,200	
3 Inspectors.	3,000.	3000
4 line men Highline.	3,600.	
1 Line Supt.	2500	
Extra Labor	6000.	3000
	79,700	36300
	36300	
Night Run.	116,000	
Depn 3 pct on 1.707.000	51000	
Insurance .7% on 900,000	7,000	
Taxes 1 pct on 1.707 000 oil.	17,000	

Wages low work in low

Carried forward Labor	116 000
Depen	51 000
Insurance	7 000
Taxes	17 000
Repairs Material &c	20 000
Secretary	4 000
Treasurer	4 000
President	5 000
	224 000

Expenses at Niagara	80 500
" Buffalo	224.000
	304.500

Receipts ~~from Light~~ at 1¢ per M	610 000
" Power at $13. per year per H.P.	130 000
	740,000
Expenses	304 500
	435 500

Total investment outside water, connections,

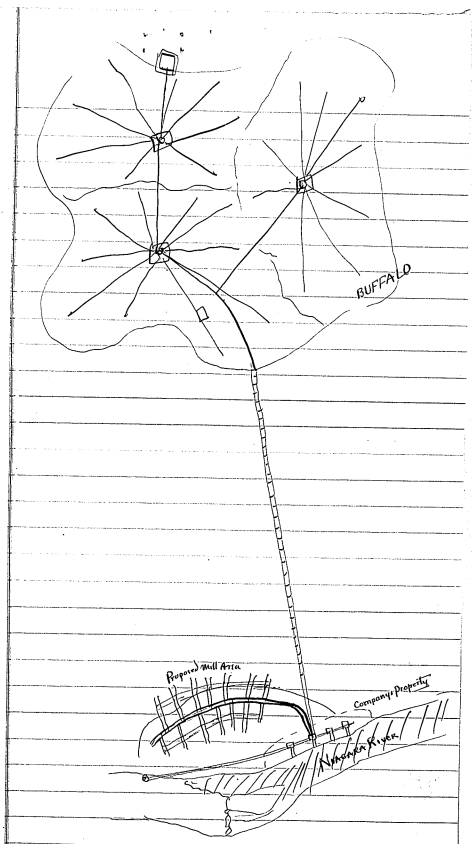
2.177.000.

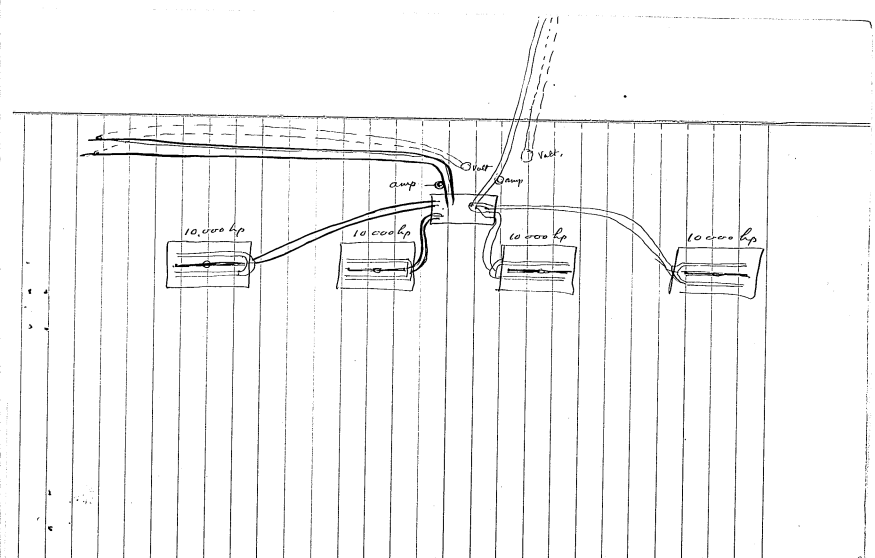
Net Earnings 435 500.

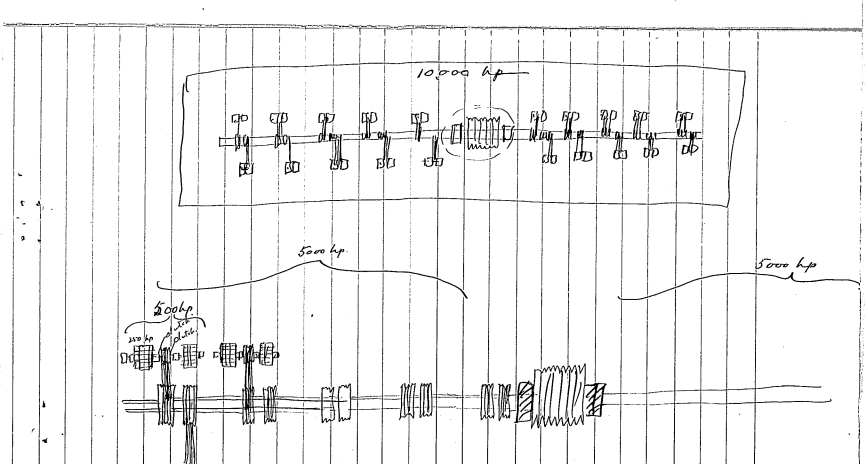
Interest on bonds at 6 pct say 435 500
130.000
305 500

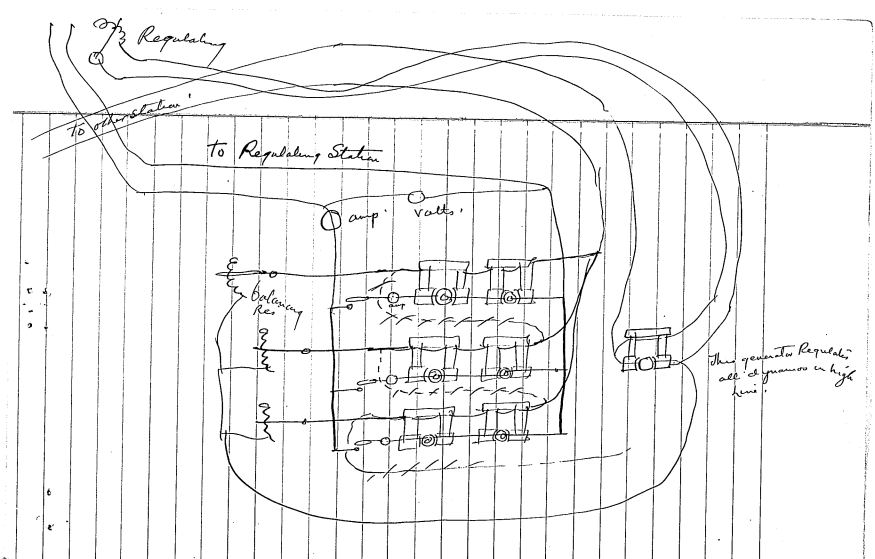
~~or~~ 6 pct on about 5 million stock

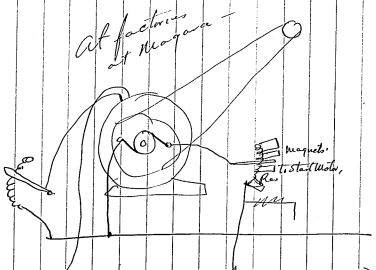
Public to buy motors, or we can rent them on 12 pct net + 6 for depen/on cost.

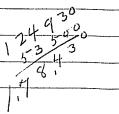

BUFFALO
Proposed Well Area
Company Property
Niagara River

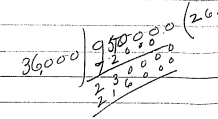

Volt
Volt.
amp
amp
10,000 hp
10,000 hp
10,000 hp
10,000 hp

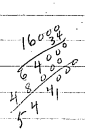

10,000 hp
5000 hp
5000 hp
500 hp
500 hp
500 hp


To Regulating
To other Station
to Regulating Station
amp'
volts'
Balancing Res
Thru generator Regulating all of current in high line

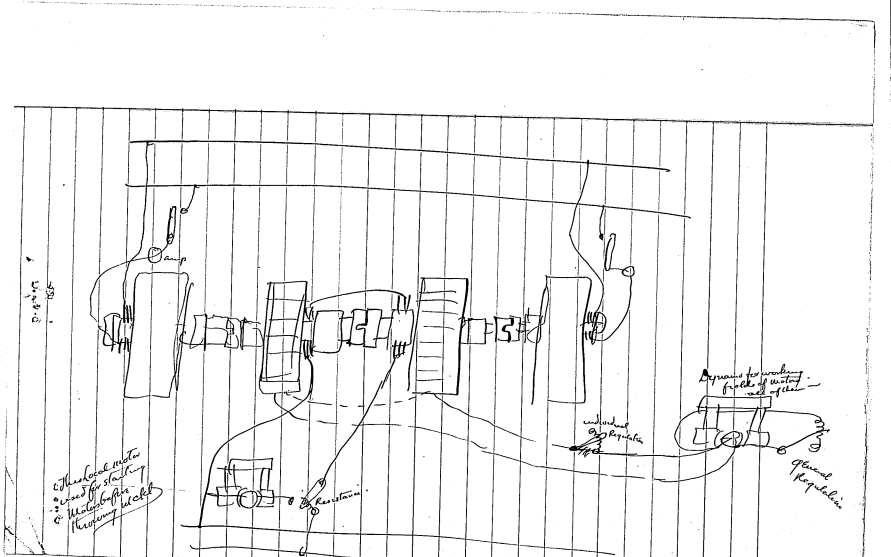

at factory
of Niagara
magneto
1, stationwire,







75000


Dynamo for working Pumps of water supply
Resistance

10 000 hp at 25 — 250 000
150 000 lights at ½ ct Equ 1 pm — 664 500
3 hours — 914 500
393 944
5 205 556

Running Expenses

Niagara 124 930
Buffalo 269 014
393 944

Scoville Niagara 14 450
379 494

Niagara

Porters Estimate, 1 500 000
Bldg + apparatus 700 000
Co & Co 700 000
Buffalo — 1 714 000
4 614 000

J.W. Adams's Estimates on Niagara

~~30 000~~ hp from
10 000 from 6 till 7 am at 4½ 10.
10 000 from 11 pm till 4 pm next day 13

100 —
130 —

Expenses night and day including supplies, taxes depreciation, insurance at Niagara on Falls power, local electric and cable to Buffalo

188 000

Expenses at Buffalo including taxes Depreciation insurance excluding 269 000

$457 000

Receipts

8000 H.P. at 40	120 000
8000 " at 30	90 000
4000 " at 20	80 000
	290 000

100 000 lights 3 hours daily at ½ cent from equivalent to one dollar per H.P. or equivalent light about 8 cts.

312 days a year including ½ h.p. & Fuse 702 000

16000 h.p. wire & fuse at 10	160 000
2500 " " local electric at 10 per h.p.	250 00
	1,402, 00

Gross receipts 1,402.00
Expenses 457.00
Profit 945.00

The 3 industries requiring most power are 1st flour mills, Lumber and electric metallurgy
Horse power per man is
Cotton 1.49
Grist Mills 13.20
Iron & steel 2.82
Lumber sawed 5.66
Paper 5.07
Silk, 0.28
Woolen 1.23
worsted 0.87
Electric deposition 500 h.p. per man

Hence the Company should have an 8 shoot to erect a 1000 bbl. mill daily and a 5 @ 500 h.p. copper reduction works to utilize the 2000.
Electric at Niagara
New York uses 85000 h.p. in grist mills being greatest amount in any state.

Portes estimate for tunnel for 120 000 h.p.
Canals for 52000, Pit-sluices, wheels &c
for 360 000 h.p. for Buffalo to cut 25000.
1.600.000.
Niagara Station Electric 700 000
4 Cables laid one of which is spare, 710 000
3 Central stations at Buffalo
with net work system for power
distribution for 10000 h.p.
and net work for 150 000 lights
& 10 000 h.p. with all appliances
started in operations but without
Power, customers, motors 1.714.000

Cost of building for 16 000 h.p.
Rope transmissions, sluices wheels
&c. 544 000

Cost of mains for 20000 h.p. within
3 miles of Niagara Village for
18 hours of 10000 h.p.
12 hours of 10000 " " 70 000
$ 5.243.000

20000 HP

Trip Expansion Engines	480000
Boilers at 10 per hp	200000.
Piping + Setting Boilers	75000.
3 Old Sp.	100,000.
40 Double Dynamos	320000.
Belts or Ropes.	10.000
Chimneys Flowers ~~—~~	15.000
Station appliances	50000
Power Mains	230000.
Light Mains	450000
	1,950,000.

Expenses –	Day	Night.
Electrician	4.000.	
General Manager	6.000.	
3 Under Electricians –	9.000.	9000
3 Chief Engineers	4,500.	3000
9 Engineers	9.000, 6–	6000
9 Oilers + asst Engrs –	5-500 6–	4000
6 Dynamo men	4.000 3–	2.000
6 Regulators –	4,800.	4,800
40 firemen	24.000. 20	12,000
18 laborers	9.000, 9–	4,500
4 Underground men + Supt.	5-600	
6 Meter men	3.600	
6 " Incan.	3.000	
3 Collectors	2.100	
4 Bookkeepers + Cashier	4.200	
4 Employees	1.200	
3 Inspectors	3000	
Extra Labor	6000	3000
	10.4600	4893.00
	48 3000	
	7-6.1	

2 Trip Exp

Labor	156 900
" Depn	51 000
Insurance	7 000
Taxes	19,000
Repair materials	20 000
Secy	4 000
Treas	4 000
Presdt	5-000
	266,900

Coal 10000 hp 10 hours at 1½ lbs of #2 coal
150 000 lbs 66 tons coal @ 132. 325 days
42 900.

10 000 hp - 4 hours at 52.28 per day -
16.991.00

Oil towards lift and other
Estimate by mr Parks
Leave it out here -

Total — 266 900
42 900
16 991
326,791

Total 326.791 ——

Receipts
Light. 610 000
Power 130 000
740 000

Exp 326 791
Profit. 413,309

420

34

312
75-0
15-6 0
2184 0 0
2341 0 0
3
702

5.243.000.

3000,

240
3

312
23-0
4-6 0
624 0 0
5 0

250

5000 [illegible]

70 312
70
2184 0

3 Trip Exp —.

Profit 413 309

Bonds on 1 950 000 at 6 pct.
117 000.

60 000
54 000
3 000
117 000

Deduct 413 309
117 000
296,309.

Leaving 6 pct on about 5 million Stock
But with no cost for Water power
Investment or running or risks
of any Kind —

Expenses at Buffalo 3 stations continuous running. 10000 hp from 7 am till 6 pm
10000 hp from 5 pm tapering off till 7 am.

President	5.000
Secy	4 000
Treasurer	4 000
General Manager	7. 000
Chief Electrician.	6.000
3 Under Electricians -	9.000
3 Mechanical Dupts.	4.500
6 Regulators -	4.800
15 Tenders	10,000
15 Laborers oilers etc -	7.500
1 Underground Supt	3 000
6 Underground men	4.800
6 Meter men at stations 6 outside	6.800
3 Collectors	2,100
4 Bookkeepers 1 Chief	4.300
4 Lamp Boys -	1.200
3 Inspectors.	3.000
4 High Line men	3.600
1 High Line Supt	2.500
Extra Labor	6,000.
Oil.	6 000
Waste	1.200
5 Mechanics -	4,000.
Meter Supplies -	2 500
Stationary	2 500
	115.300

Carried forward

Brushes.	115 300
Commutator renewals	2 000.
Repair armature fields.	8,000.
Bearing boxes	18.000.
Night run expenses.	3,000.
	49.000
	$195-300

Depen 3 p.c.	51 000
Taxes.	17.114
Insurance (not cadra)	5,600.
	$269.014

Niagara	124 930
Buffalo	269 014
	$393.944.

10 000 hp at $18. per hp 180 000.
150 000 Lights at ½ c hour
Equivalent to one at $1.00.
Sold for 3 hours including
small motor some rate. 320 days -

~~Less cost of lamps 37 c how~~	~~664.500~~
Every 4.80 c worth light sold (Gross Rcpts	$44.500
Expenses	393 944
For interest.	460.556

Cost at Buffalo for 72 000 hp –

Buildings extra apparatus etc double as

$ 1,316 000 at Niagara

Expenses increased 42 000. as

+ Depreciation + Taxes: 31 000 / 73 000. — 124 930 / 73 000

Total Expenses — 197 930

at Buffalo Extra investment in Bldgs depreciation

Interest additional — 1 574 000.

~~Depreciation~~

Extra Running Expenses 50 100

Depreciation on 1,574 000 Extra 45 000.

Taxes – 15 000.

Insurance 5 600

Extra Expenses 115 700 –

High line. Extra Cost. 450 000

Total Extra investment.

Niagara –	658 000
Pole Line	450 000
Buffalo	1 316 000
	2.424. 000.

Extra Expenses Niagara	73 000
Buffalo.	115 000
	188, 000

Cost of copper 17 miles 15 per cent drop 6000 Volts.		275.000
Cost of poles + erection		135.000
" Ground wire at Buffalo		12 000
5 miles high volt underground		155.000
~~3 Buildings and land~~		~~80.000~~
Right of way		20.000.
Apparatus		6 000
		503, 000
Cable laid	700 000.	
3 Buildings + land at Buffalo		80.000
Motors on high line for 28000 hp -		392 000
Dynamos on low lines 26000 hp		364 000
Regulating Dynamos		28, 000
Motor Mains 800 Volts. 1 mile in any direction from station,		300 .000.
Electric Light mains. $\frac{1}{2}$ mile in any direction from station.		460 .000
Apparatus at stations.		45 .000
Meters + extra apparatus.		45 .000
		1,714. 000.
Total Niagara.		658, 000
Main line		503 000
Buffalo		1 714 000
		2,875, 000.

36000 hp at Buffalo.

8 pct Loss in Dynamos. Loss 2880 going to us 33120

15 percent Loss on conductors 4968 — leaves 28152

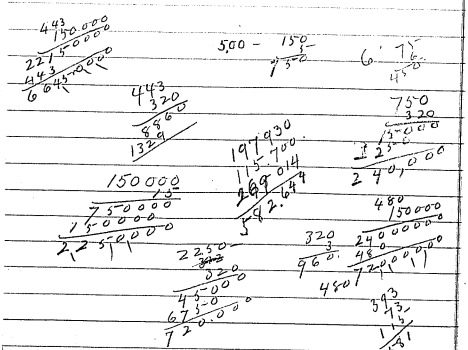
8 percent Loss in Motor at Buffalo, loss 2252 leaves for running the power Light Dynamos 25850

8 percent Loss in Dynamos 2068 leaving power on Dynamo Terminals — 23.782

~~Total 10000 hp for power & loss 8 in motor & 4 in~~ & 10 hp

There is 12 pct loss in lightmains & 8 percent in motors & 4 in Cables making 12 pct loss on power for light & for motors hence the loss of 12 pct on 23,782 hp available at Dynamos 2854 leaves 20928

or roughly 10000 hp for light & 10 for power



Estimates of taking 36000 hp at Niagara and delivering 20 000 hp in the premises of the consumers at Buffalo. The division being 10000 hp in 150 000 lamps. and 10.000 hp of power on the belts of the motors of the consumers.
One single station at Niagara and three Stations at Buffalo.

Investment at Niagara

Building	38.000 –
Dynamos	504.000
Foundations for Dynamos	20.000
Gearing. Shafting. pillow blocks to connect to vertical Turbine shaft.	30.000
Electrical Switches wiring station Regulating apparatus	39.000.
Ground wires - double –	12 000
Labor of placing all.	15 000
	$654,000
Extra Cost Building.	42 000
	700. 000

36
2 1/2
36/195.000(

Dipon on wheels rope pipe etc, 5 pot on 275.000.

13.725

18 3.000
3 1/2 63.000
40
15 40.000

Expenses at Niagara -

Day Run.

6 –	12	Dynamo Tenders.	7.200
	2	Pressure Regulators	1,600
4	8	Mechanics	8,000
	1	Chief Electrician.	7,000
1	4	Attending Electricians	8,000
	1	Master Mechanic & Gen'l manager	5,000
4	8	Oilers and laborers –	4,000
	10	Water wheel regulators.	6.500
		Oil –	5.500
		Waste.	1.500
		Brushes } daynight	1,000
		Bearing boxes	2,000
		Commutator wear.	5,000
		Repairs armature fields etc	15,000
			77.300

Night Run

	6	Tenders	3600
	2	Regulators.	1,600
1	2	Attendant Electricians	3 000
10	5	Water wheel Regulators.	3.250
4	5	oilers and laborers.	2 000
	1	Chief night Electrician	3.000.
			$ 93.750

5 men 14,450

		Depreciation at 3 pct.	19 600
50 000		Taxes	6,580
3 500		Insurance. .75	5,000
53,500		Total Expense —	$124,930 yearly

Depreciation 19,600 Repairs 15,000 + 75,000 Coal –

Extra Expenses Grazing 188 000
20000 net hp at £18. 360 000
Leaves 172 000

183
360

to pay on 2,424,000.

If price of power is graded as it should be the average will be at least 25 per hp. This will increase the receipts to 500 000 profit. 312,000

If the other 10 000 hp was sold at 25 00 per yr. then total profit on previous estimate will be increased from 180 000 to 250 000,

Making Total Investment

1st 20000	2 875 000
2nd "	2 424 000
Total Investment	5.299 000

Gross profit	
Light	664 500
30 000 hp at 25	750 000
	1.414.500
Expenses	582 644
net	£831,856.

215
1550

Niagara

1

Porters estimate for tunnel for 120 000 Hp -
Canals for 52.000, pits sluices wheels etc for
360000 hp for Buffalo to net 20000,
1,500 000,
Niagara Station Electric 700 000
4 Cables laid one of which is spare 710 000
3 Central Stations at Buffalo
with network system for power
distribution for 10 000 hpower
and network for 150 000 lights
or 10 000 Hp with all appliances
started in operation but without
Power Customers motors, 1. 714 000

Cost of building for 16000 hp
Rope transmission sluices wheels 544.000,
etc.

Cost of mains for 20.000 hp within
3 miles of Niagara Village for
18 hours of 10000 hp
12 " of 10 000 hp 75.000,
$ 5,243,000

Expenses night and day - including supplies
Taxes depreciation, insurance at Niagara
on Rope power, Local Electric and
Cable to Buffalo - 188,000

Expenses at Buffalo including Taxes
Depew Tonawanda Executive 269 000
$457.000

Receipts

3000 hp at 40	120,000
3.000 at 30	90.000
4000 at 20	80.000
	290.000

150.000 Lights 3 Hours daily
at ½ cent hour equivalent to
one dollar per M. or equivalent
light about 80 cents.
312 days in year including
½ horse power & less - 702 000.

16000 hp wire rope at $10	160 000
25,000 hp local electric	
at 10 per hp -	250.000
	1,402.000

Gross receipts. 1,402,000
Expenses 457,000
Profit. 945,000

The 3 industries requiring most power is
1st Flour mills, Lumber + Electrometallurgy -
Horse power per man is
Cotton 1.49
Grist Mills 13.20
Flour 2.82
Manufactured 5.56
Lumber sawed 5.07
Paper —
Silk 0.28
Woolen 1.23
Worsted 0.87
Electrodeposition 5.00 hp per man

Hence the Co should have an approval to erect a 10000 bbl mill daily and a 5@7000 hp Copper reduction works to utilize the 20000. Electric at Niagara -
N York uses 82000 hp in grist mills being greatest amount in any state.

5,600,000 bonds at 90 5 pct
10,000,000 Stock 6 pct

5-6
1-0

6·7
400
26 800
335 00
603

67
50
3347

600
6
36 00

26 800
335 0
3015

1 - 9/32

6 inch

41/3
5 32) 133 (4
128

36 Shafts.

100 feet at 60 per foot -	6000
Turbine + Gearing etc.	3000
Vertical Wheel Shafts + Gudes	1500
Thrust Gearing + Bearing	1000
Gear	1000
	12500
	36 Shafts
	75000
	37500
	37
	450000

Main Tunnell - 7800 feet tunnell. 3 Shafts 700 [illegible]

2 Canals	120 000
Sluices	40 000
Cross Tunnell,	20. 000.
Small Sluices	10. 000.
Grate Bars	10. 000.
	26000 / 1340 000 / 69.
	120 000
	140. 000

Cost of 2nd 10000. hp or 36000 hp -

Extension of Canal. 100 000
Large Sluices Small Sluices Gen. Transmit. 70 000
36. Turbines shafts &c

450 000
20 | 620.00 | 30
60
00

620 000
1340 000
1960 000

580 horsepower - net not indicated. to give 500 net

Investment 25 for Boiler 25 for Engine

50 per hp.
Pump + piping —

Expenses

Engineer	1092
2 firemen at $2	1248
3 laborers at 1.50	1404
Oil	250
Waste.	50
packing	100
Grate bars	200
Wood	100.
Water at 15c 1000 gal 35 lbs water hp net	
21875 gal daily 32c	100.
Depreciation on Boiler, 7 pct	
" Engine. 5	
Taxes.	250
Insurance,	250.
Coal. 4½ lbs #2 coal per hp per hour.	

6 pct extra power in Engine for friction so as to give 500 net. or 530 hp.

10 tons daily + 10 pct for banking all night, 11 tons. or $22 daily

312 days

6864

500 | 13408 | 26.80

$26.80

$300 additional depen on above

$2740

25 hp. 2200#

Engineer	750
oil	50
waste	10
Pkg	10
grate bars	15
Wood	50
Water	7
Repair. boiler	70
" Eng	55
Taxes	22
Insurance	22
Coal	4.75

25 | 153.6 | 61.40
150
36
25
110

$61.40

50 horsepower net.

4000.

Engineer.	7 50.
oil.	50
waste.	10
Packing	10
grate bars	20
Wood.	50
Water.	10
Depcn. boiler	140
" Eng	100
Taxes –	40
Insura	40
Coal	900

$$50 \overline{)2120} \quad 42.4$$
$$200$$
$$120$$
$$100$$
$$200$$

42.40

100 hp —

Investment $75 per hp	7500
Engineer	1000
1 fireman —	624
Oil.	100
Waste	25
Packing	30
Grate bars	50
Wood	50
Water	25
Repair boiler	5.25
" Engine	375
Taxes	75
Insurance	75

1372 / 6864 / 4932 / 490 / 5.25

Coal —

1372 | 4932.6 | 4.32 lbs per hp per hr

100 | 4 3 2 6 | 43.26
4 0 0
3 2 6
3 0 0
2 6 0

$43.20

6 lbs

3 30

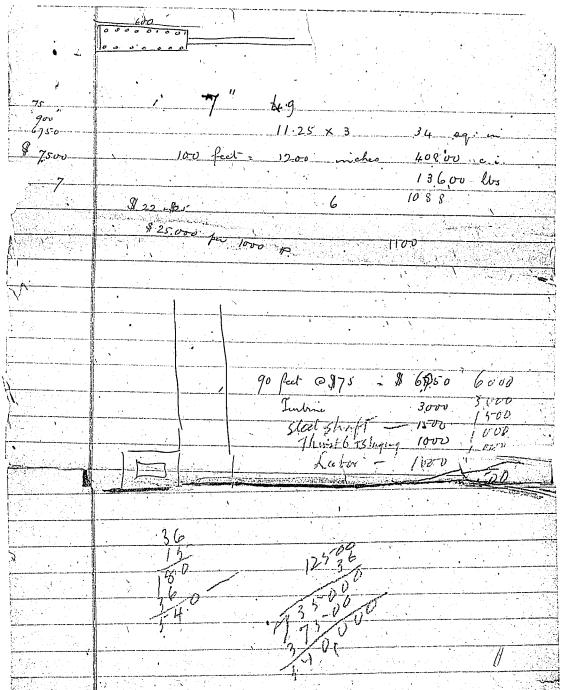
250 net hp –

Investment	17500
Engineer	1000
2 firemen	1248
2 Laborers	950
Oil	180
Waste	50
Packing	75
grate bars	100
Wood	75
Water	55
Depcn. boiler —	450
" Eng —	375
Taxes	175
Insurance	175
Coal	3500

$$250 \overline{)8408} \; 33.60$$
$$750$$
$$908$$
$$750$$
$$1580$$

33.60

$$5\tfrac{1}{2}'' \overline{)30''} \; 6$$


600
7"
11.25 x 3
34 sq. in
100 feet = 12.00 inches
408.00 c.i.
13600 lbs
6
10 8 8
$22.00
$25.000 per 1000 #
1100
90 feet @ $75 = $ 6750 6000
Turbine 3000
Steel shaft 1500
Thrust bearing 1000
Lator 1100
36
12
60
60
14
12
3
3
3
3
1

[LIST BY ARTHUR E. KENNELLY?]

List of Boilers in City of Buffalo N.Y.
taken from Insurance Atlas

No.	Map.	Street	Owners	HP.	
1	1	Commercial & Ship & City Hly Canal	Fulton Tower		
2			Sturges Elevator	120	
3			Frontier Elevating Co.	500	
4			Buffalo Linseed Oil Wks	150-200	Kellogg McDargall.
5			Marine Elevator	145	
6		Pratt Ship Navin	Elevator	200	T. Coatsworth
7		Buffalo Nav. 18th St	Malthouse	84	C. J. Curtis
8		" "	Erie Reserving Co.	20	
9		Stevedor -	Stenberg Elevator	60	Scott -
10		Buffalo Nav. South side	Lion Elevator	80	
11			Richmond	80	T. M. Richmond & Co.
12			Onondaga Salt Co.	25	
13			Brooms Elevator		
14			Meadows + Fiske Tower		
15			Merchants Tower		
16			Watson Elevator	90	
17	2	Main Between + Washington	Barn Kettle Manfg.	8	Cost & Co.
18			Oil Warehouses	15	
19			Brass Work + Machine	20	
20		Washington + Burwell	Carriage shop	10	Worster
21		Ship	Buffalo Sweep Factory	40	N W Bell & Co.
22		Beaver + Burwell	Buffalo Last Works	15	
23		Burwell + Illinois	Iron Works	40	Farrar & Trefts
24		Illinois + Mississippi	Steeplechase Tannery Mfg	75	Schoolkoff & Co.
25		Main + Washington	Bangor Morrell Manufacturing	50	
26			Engine Works	35	Dampeters
27		Washington + Indiana	Malt House Quarries	8	Tathill + Bengsman
28		Elliot + Lane	Upholstering Co.	40	
29			Iron Works	65	G.W. Tifft Son & Co.
30		Indiana + Illinois	Boiler Works	5	M. Rattin
31			Boiler Shop	95	Farrar & Trefts
				866	
				2065	

No.	Map	Locality	Building	Owner	Statistics of 1865	Pr. of 1865
32	2	Illinois + Mississippi	Nickel Plating		160	
33			Copper + Brass	A. H. Brown	20	
34		Mississippi + Hanover (canal)	Eagle Iron Works		30	
35			Store Work	Stearman + Jewett	80	
36		Canal + Columbia	Store Works	" "	30	
37		Columbia + Michigan	Buffalo Heating app.s		75	
38		S. Ohio St	Elevator	Wilkinson	200	
39	3	Main + Washington	Printing office		85	
40			Iron "		35	
41		Washington + Elliott	Shot factory (under)			
42		Ellicott + Wells	Painting	Spring + Bro		
43			Leather Belt Mfg.	Rattle + Keating	75	
44		Wells + Michigan	Spice Mills	Excelsior	18	
45		Ellicott + Wells	Mill Coffee Roast		15	
46		Wells + Michigan	Hotel	Brookfield	164	
47			"	Bernalen		
48			House Furnishing	siding Shipard + Co	150	
49		Main + Washington	Mansion House		110	
50			Medicine + Bit Brass		40	
51		Washington + Michigan	Spice Mill	Hatch + Jenks	25	
52		"	Belt + Hose Works	Empire	15	
53		Main + Washington		Mayo J. T.	25	
54	4	Washington + Elliott		T. E. Jewett	60	
55			Commission Advertising		50	
56		Main + Washington	Machinery Mfg.	Boil + Hunt	90	
57		Washington + Elliott	Shoe Factory		80	
58		~~Ellicott + Washington~~	Medicine Mfg.	Forster Milburn + Co	40	
59			Coal + Iron Docks		165	
60		Ellicott + Canal	Niagara Baking Co		60	
61		Canal + Michigan	Job Printing	Gracie + Co	80	
62		"	Fitch Institute			
63		Ellicott + Canal		Fowler + Son		
64			Paper Box Factory		30	
65		Washington + Elliott	Library Young Men's			
66		Ellicott + Oak	Granger Grocers		40	
67		Oak + Elm	Cigar Box	Riesterholz + Zier	10	
68			Grain Factory			
69		Elm + Michigan	Planing Mill	Clark Hayes + Frost	40	
					177-4	
					41 52	

No.	Map	Locality	Building	Owners	Rental 1894
70	5	Washington + Elliott			
71		Elliott + Oak	Bakery	Fisher + Koon	4.00
72				R. Orms.	8.
73			Machine Shop		65.
74	6	Oak + Elliott	Planing Mill	Salvable & Sewell Car Co.	8. ✓
75			Oil Co.	Lauder Eubig & Co	80 ✓
76			Furniture Factory	Hearn + Co	10
77			Brass Factory		100 ✓
78		Oak + Elm	Wood Shed		8.
79			Piano Factory	A. Rintzman's	6
80		Elm + Michigan	Planing Mill	Metz & Co.	50 ✓
81			Printing Press		100. ✓
82	7	Elliott + Oak	Refrigerator Factory		1
83			Stove Factory	J. B. Jewett + Son	60 ✓
84			Rolling Mill	Machine Blower	10
85			Carriage House	Urban	200
86		Oak + Elm & Genesee	Slaughter House	Hearthorn + Son	20 ✓
87		Genesee + Tupper	Coffee		5. ✓
88			Slaughter House	Backhurt	4
89		Mich + Elm Genesee + Seymour	Vinegar Factory	W. G. Klipfel	40 ✓
90		Tupper + Goodell	Furniture Mfg.	C. Granacher	12 ✓
91	8	Goodell + Benton	Cooper Shop		15
92		Benton + Virginia	Slaughter House		4
93			Carriage Factory		6
94	9	Virginia + Benton Washington + Main	Niagara Marble Wks	Lantz + Co	80 ✓
95			Brewery	Germania American	40 ✓
96	10	Main + Franklin	New Music Hall		
97		Goodell + Main + Washington	Brewery	C. Wyand	60 ✓
98		Benton + Virginia Washington + Elliott	"	Empire	78 ✓
99	11	Huron + Main		C. Wyand	90 ✓
100		Pearl + Main	Wall Paper Mfg.		
101		Washington + Huron Huron + Washington Main + Washington	Police Station		
102	12	Franklin + Pearl Genesee + Huron Genesee + Main	Carpenter	G. Wagner	
103			Medicine Factory	Dr. Pierce's	40 ✓
104			Buffalo Tobacco Work	Davis + Brown	26 ✓
105		Genesee + Richards	The Genesee		50 ✓
106		Main + Washington	Y. M. C. A.		
107		Richards + Washington	Machine Shop		
108		Pearl + Main Richards + Court	Printing Room		8
109			Hotel Stable		~~100~~
110		Main + Washington Richards + Lafayette	Furniture		
			Dentist Mfg Co		80
			Dyeing Co.		10
					2663
					5508

No.	Map	Locality		Concerns	Owner	Stated Value
						3769
111	12	Mohawk Lafayette	Main + Washington	Tift houses		55 05
112				Buffalo Insurance Co		$ 15
113		" + "	Washington + Ellicott	Grand Opera House		12
114		Genesee Franklin Sq		Buffalo High School		—
115	13	Delaware Ave	Niagara + Eagle	Steam Laundry		—
116		City	Hall			10
117	8	Franklin + Pearl	Eagle + Church	Grocery		—
118		Franklin + Erie	Church + W. Swan	Russian Baths		—
119		Erie W. Swan +	Main St	Mercantile Agency	R. G. Dunn & Co	100
120				The White Building		20
121		Pearl + Main	Eagle + Court	Dry Goods	Brownell	20
122		Pearl + Seneca	Erie St			
123				Furniture Mfy		15
124				Clothing Mfy		15
125		W. Swan + Seneca	Pearl + Main	Board of Trade		20
126		" " "	Main		Barnes Hengerer	190
127	14	Church + Mechanic	Park Terr	Mfg Co:	Bolton + Altheimer	30
128		Ann + Mechanic	" " + Erie Canal	Buffalo Batting Co		20
129				"	B. Starbird	10
130				Trunk Mfy.	Kenneday	50
131		Ann + Charles	Park Terr + Erie Canal	Machine Co	Stow	140
132		Charles + Henry		Machine Shop		40
133		Henry + Erie		Last Factory	J. C. Kingston	140
134		"		Planing Mill	C. J. Hamilton	100
135				Plant Contractors Mfy		
136		Lloyd + Lake	Main	Shoe Factory		10
137		Canal St + Canal	Canal + Erie	Wood		7
138		Erie Canal Pearl	St + Park Terr	Iron Work	Bratt	30
139		Erie Canal Comm	Locks + Erie	Thresher Grain	Skinner Co	25
140		Pearl + Comm St	Park Terr	Ship Chandlery		60
141		Lock St	Erie St + Feed	Printing		10
142		Franklin + Pearl	Park Terr + Seneca			6
143		Pearl + Main	" " "	Stained Glass Mfy		4
144		Paper Box "	" " "	Paper Box Factory		10
145				Cigar Printing		15
146				Exchange Building		
147				Bank Offices		200
148	15	Erie Canal Water	Pearock + Water	D. L. & W. Coal Yard		250
149	15	Norton + Canal		Flour Mill		60
150				Sculpture Elevator		60
151				Elevator	Evans	30
152		Norton Pearlock	Evans	Elevator		12
153		Lecantaux Canal	Flyd + State St	Machine Shop	Sutton Bros.	30
154		Commercial Slip Floyd	Lake + Rhines	Mill		7769
						7074

Nr	Map	Locality		Concern	Owner	Assd Val
155	15	Lloyd Hanover	Lake Rhine	Soap Factory	Landy	~~32,000~~ 7,000
156				Ship Smith		10
157				Refrigerator	Prince & Co	75
158		Buffalo Harbor Water St		Coal yard	D. L & W.	50
159				Union Elevator		70
160				Bennetts		80
161				Agochay Line		6
162				Wells Elevator		350
163		Main Hanover	Rhine St	Tin plate factory		8
164				Printing Ink		20
165	16	Erie Canal	Genesee St	Malt House		
166			Huron St			18
167		Erie Basin	Peacock Slip	Coal Shipping Elevator		10
168			Court Slip	Horton		45
169			Morse Flr	Mann Elevator	X	
170				Erie Basin Elevator		60
171	17	Wilkeson St Canal &	Erie Canal Jackson	Steam Dry Kiln		
172		Wilkeson Slip Genesee St	& Ohio St	Planing Mill	Thayer & Co	35
173		Canal Alley &	4th & Jackson	Chemical Works		60
174		Park Terr Court St	Morgan St	Buffalo Gas Light		64
175				Carriage Works	Rogers & Co	
176		Genesee St Park St	Park Terrace	Iron Works	Bingham & Taylor	20
177		Park St Terrace Rd	Delaware Ave.	County Jail		
178	18	7th St. Wilkeson	& Niagara	Carriage Factory		20
179		Morgan St Delaware	Huron & Mohawk	Brewery		10
180		Wilkeson & 7th	Court	Furniture	Moffat & Seurer	65
181		Court St Mohawk St	Clair & Wilkeson	Furniture	Cobb & Son	50
182				Brush Electric Light Co		3325
183		Straits Morgan	Court & Mohawk	Rose Patent Refrigerator Co		10
184		Niagara St Mohawk	& Del. Ave.	Sausage Factory	Hollnagel & Co	114
185	19	Georges Fifth	Court	Gas works		40
186		Court 4th &	Wilkeson	Planing Mill	Lee Holland & Co	300
187		Erie Canal, Virginia Carolina &	4th			
188					Pitts Agricultural St	75
189		Court 4th	Erie Canal & Wilkeson	Shipbuilding	G. H. Notter	15
190		Carolina Erie Canal	George St & 4th	American	Glucose	350
191		Carolina Georgia	4th & Ellicott	City Malt	House	16
192		Lake Erie Slip	No 3	Hydraulic	Industrial Tool Works	15
193		6th St 7th	Virginia & Carolina	New Y. Central R.R.	Co	8
194		Niagara St	Prospect Ave Virginia & Indiana	Children's Country	Cutler Furniture Co	60
195		7th St	Niagara Hudson & Maryland		J. B. Sweet & Son	20
196					Clark Mfg Co	50
					Francis Ave C	70
						5668
						12703

No	Map	Locality		Concern	Owners	Steam HP
197	21	7th Niagara	Hudson + Maryland	Malt House	H. Diehl	15
198		7 " "	Maryland + Virginia	Paperhangings	Bigs	80
199	22	Erie Canal Jersey	Ogden. 4th + 4½ St	Buffalo Alcoline Co		100
200		Jersey, Peruka	4th + Lake View	Mfg Co	J. T. Noye	75
201		Erie Canal 4½	Hudson + Maryland	Malthouse	J. Scheers	50
202		Prior to Now		River View Pickle	+ Vinegar Wks	20
203		Erie Canal 5th	Ponna + Route St	Penitentiary		365
204		Erie Canal 4½	Maryland + Virginia	Paving Co	Barber	35
205		Erie Canal 5th	Route + Hudson	Tannery	J. F. Schroellkopf's	75
206		Elm. High +	Michigan St	Brewery & Co	Buffalo.	25
207		" "		Malthouse	H. D. Madden Bower	30
208	23	Main + Delaware Ave.		Brewery		? 25
209		4th Lake View Ave, Portis + Jersey		~~Brewery~~ Boiler Co		40
210		~~Erie~~				60
211				Malthouse		40
212		6th Jersey + 7th		"		20
213	24	Delaware Ave Mirch St Allen +	Virginia	White Lead	Works Cornell Wait	~~100~~
214	25	Niagara + Clinton Ave. Barnville		Planing Mill	Talcma	15
215		" "			Kring Spring Co	20
216		" " Delaware Ave		Wood + Iron Working	Joshua Ross	60
217		Erie Canal	Niagara St	Malthouse	Richard Bellymow	100
218		" "	opposite Ferry St	Malthouse	J. B. Manning St	20
219		Albany + Niagara		Sect. Brewing Co	J. Scheers	100
220		Niagara + Bidwell		Buffalo Spring +	Gear Co	20
221	26	Tonawanda St Seajeyuda Creek		Shingle Mill	T. Thomcom	50
222		4th Ave. Bird St	Mt Washington + Niagara	Buffalo Hammer Co		20
223		Dearborn Niagara + Tonawanda		International Elevator		200
224		Black Rock Harbor Seajeyuda Creek		Shipbuilding Hardware Co		150
225		Forest Ave.	Niagara St Bridge	Niagara Bridge Works		30
226				Parochial Factory	T. Griffin + Son	120
227				Malthouse	C. G. + J. S. Wolf	12
228	27	South St Niagara			Baptist Church	~~15~~
229		Hamilton Amherst + Erie Canal		Waggon Shop	A. A. Justice	10
230		Amherst Niagara Mill St + Erie Canal		Ice House		8
231		Facing Niagara River		Starch Works	Gilbert	—
232	28	Seajeyuda Creek + Tonawanda St		Saw Mill	J. Carycook + Son	30
233		" " "		Buffalo Malleable Iron	Works	320
234		Erie Canal Hertel ave + Niagara		Box Factory	Sattler + Stephan	80
235		Tonawanda St Winan St Creek Mills		Erie Brick Works	Hall + Son	60
236		Winan St, Creek.		Saddlery Hardware	Pratt + Letchworth	372
237		Basement Brewing		Box + Heading Factory	Plumber + Son	200
238						7862
						15744

No.	Map	Locality	Concern	Owners	Stories
238	28 a	Niagara St S. School St Erie Canal	Buffalo St Railroad Co Stable 3		157 77
239		Michigan " Maine + Main	" " " 2		35
240		Lake Erie City Ship Canal			300
241		Amherst, Maplewood	Buffalo Coopering Shop		100
242		Niagara and Fraser St	Lubricating Comp	Cannon Bros	—
243		Whalebone, Dolphin, + Fisher			35
244		Massachusetts Opposite Shields ave	Planing Mill	(Haggard + Marvin) Chas Hoffner Bros	150
245		Masten + Pullen	" "		35
246	28 b	Brantley Slip Canal S. Michigan	Dakota Elevator		200
247		Tonawanda St Blackrock	W. Buffalo Planing Mill		90
248		Gull St " "	Weisbrauer Mfg Co		25
249		N. Hampton + Michigan	Schneider "		40
250		Porter Ave Front Ave + 7th	Niagara Hotel		140
251		Blackrock Delaware St	Niagara Tug Co		115
252			Box factory	G. C. Bell	—
253		Chamberlain St	Cutlery Mfg.	A. Butler + Son	140
254		Harlem L.R.	Mfg. Co	Clark	35
255	29 II	Contentment Slip + Ratte Slip	Weston Transfer Co		20
256		" "	Wheeler Elevator		50
257			Wilson Planing Mill		50
258			Mills + Co Dry Dock		150
259			Union Dock + Ship yards		55
260			" " "		25
261			" " "		
262		Ratte Slip, City Ship Canal	Buffalo Wood Barkeanizing Co		100
263	30	Buffalo Harbor South + Ohio	Erie Elevator		500
264		Ganson St + Buffalo Harbor	Planing Mill	Burt + Meade	80
265		Ganson St + City Ship Canal	Buffalo Coal Co	Coal Yard	40
266	31	Buffalo Harbor + Ohio St	Plymouth Erie Ref	Elevator	100
267		Chicago St + Ohio "	Niagara Elevator		165
268		Chicago St Machinware + Wabash	Hoffner Chicago St	Ironworks	200
269			Holmes Barrel Factory		150
270		Niagara	Niagara Lumber Co	Factory	85
271		Wabash St Ohio + Ohio Basin	Barbour Milling Co		250
272		" "	Hoisting Engine		10
273	32	Michigan Fulton Elk Maroon	Meal Mill	Brinkmann	80
274		" Elk Ohio + Moore	Machine Shop	Knight Sisson + Co	16
275		Moore, Ohio, Machinware + Chicago	Heine Ironworks	Trout + Co	85
276		Chicago St Miami St Ohio + Slip	Buffalo City Steam	Flour Mill	100
277		Ohio St Buffalo Harbor N.Y. Cent	Elevator		600
278	33	Michigan Main Hamburg Canal Slip + Chicago	Planing Mill	E. B. Holmes	100
279			Armsdorf Glucose Co		765
280			Tannery	S. L. Mason	16
281				Buck + Howard	76
				2/1151	4140

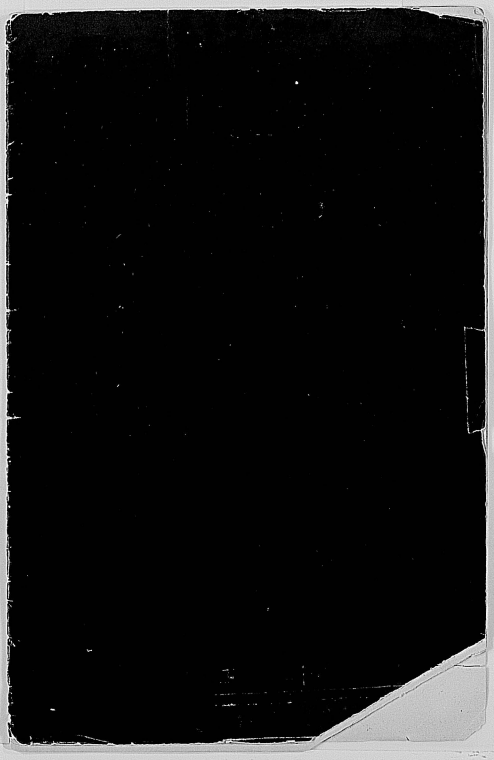
No.	Map	Locality	Concern	Owners	Hands
282	33	Chicago M.H. Canal + Granger	Howard Iron Works		2
283		E. Market, Scott, Perry + Chicago	American Glucose Co.	Feed Mill	25
284			Buffalo Box Mfg Co		60
285			Lake Erie Boiler Works		10
286		Chicago Granger, Perry + Ohio Sts	Planing Mill	Blake + Bigelow	40
287			Forge + Dock	Dalamy	800
288			Cast Mfg	Robins + Paget	—
289		Malvern, Perry + Chicago	Iron Works	Reagan + Co	20
290			Bolt + Nut Works	Kerr + Park	40
291		Chicago Perry, Fulton + Ohio Sts	Soap Mfg Co	Mrs Graham + Stowe	120
292			Malt house	Wheeler + Co	40
293	35	Michigan, for Mark + William	Wood + Coal yard		16
294		" William Clinton + Main	Shipland + Co	Tennonic Mfg (1)	30
295		Pine W Bennett, William + Clinton	Clinton Corporation	Brewery Co	140
296		Michigan Clinton, Eagle + Main	Shipland + Co	Tennonic Mfg (2)	25
297		Pine Eagle + N. Division	Slaughter House		4
298		Sycamore Cypress line + Michigan	Woodyard	Altmanns Bros.	4
299		Cypress Broadway Michigan + Pine	Slaughter House		12
300	37	Spruce Ash, Sycamore + Broadway	Ice House		2
301		Spruce, Walnut, Sycamore + Broadway	Knudling Wood	Factory	10
302	38	Michigan Cherry, Spruce + Genesee	Slaughter House	Ridpprecht	6
303		" "	Turning Shop	Valentine Bretz	10
304		Hickory Genesee + Spring	Brewery	Haas	20
305		Ash Spruce " + Sycamore	Planing Mill	Nickochremin	45
306			Dock		8
307		Walnut Hickory Genesee + Sycamore		Dobert	10
308		Hickory Platt Genesee + Sycamore	Excelsior Malt House	Calms	24
309			Shoe Factory	J. Eberts	20
310		Platt St Genesee Sycamore + Spring	Printing Room		5
311	39	Cherry Genesee Mortimer Duval	Furniture Factory	Sarem + Armbrecht	50
312		Mortimer Genesee Rane Sycamore	Sausage Factory	Specht	30
313		Orange Cherry + Pearl	Planing Mill	Mebelhaus	120
314	40	Genesee Jefferson + Davis	Malthouse		6
315		Lyng Alley Broadway	Sausage		4
316		Guilford Harmon Broadway	Planing Mill	Reismann	40
317		Broadway Schumway + Smith	Brewery	Julius Brinn	25
318	41	Spring Champlain Tansey Brandon	Distillery	Coors	60
319		Cherry Champlain Mortimer Brandon	Buffalo Forge	Co	50
320		Mortimer Sycamore George + Jefferson	Varnish Factory	Ebenezerin	25
321		Jefferson Madison Broadway Bayard	Planing Mill	Hasselbeck	30
322	42	Emerald Peckham Water Willow	Police station		—
323		Adams Monroe Peckham Brandon	School		—
324		Peckham Monroe Madison Willow	Coopers Shop		
32					2462
					23237

No.	Map	Locality	Concern	Owners	$
325	43	Spring Platt Broadway William	Washington Iron Works		3385
326		Platt Hickory - -	Cooks Distillery		50
327	44	Platt Hickory - -	Brewery	Ross	80
328		Hickory Walnut - -	Malthouse	Aulkenbacks	150
329	46	S. Division N. Division Spring + Hickory	Brewery	Beck	30
330		Swan St Fulton Spring + Jefferson	Buffalo Manufacture Co		140
331	47	Fulton Seneca Chicago + S. Ocean	Carriage Mfg	Miller	80
332		Chicago St Seneca Carroll + Division	Planing Mill	Bolles + M.	
333		Carroll Exchange Chicago - "	Buffalo Scale Works		120
334		" Cast iron pipe Co			175
335		Hamburg St Canal mr. - -	Car Wheel Wks	Averill	50
336	48	" " "	Tannery	Nanney + Co	140
337		Perry Louisiana + Hayward	Coal dumps - Lehigh Valley Hospital		20
338	49	Fulton Seneca Jefferson + Van Rensselaer	Soap Works	Larkin + Co	1200
339		Seneca Swan Michigan + Elk	Machine Shop		140
340			Lumber Office		35
341		Exchange Van Rensselaer Carroll	Brewery	Diers	4
342			Shoepeckin Mfg		20
343		Carroll Van Rensselaer Hydraulic St	Malthouse	Abonnes	140
344			Slaughterhouse	Ramonnis	12
345		Swan Hagarman Seymour St	Woodyard		10
346		Emslie Swan Hagelmann Colvin	Sheepskin Tannery	Bowe	10
347	50	William Jefferson Randall + Hamilton	Niagara Stamping + Tool Co		70
348		William Randall Hamilton + Spring	Refrigerator Co	Howe Mercker	60
349		Hamilton Bristol Jefferson + Spring	Coal + Wood	Yard	6
350		Bristol St Jefferson Clinton + Spring	Planing Mill	Heinrich + Son	140
351		Clinton Platt Eagle + Spring	- -	Claberen Bros	30
352			Brewery	Haltenbrach	25
353	51	William Emslie Watson + Howard	-	Luippold	80
354		Clinton Emslie	"	Schueler (2)	15
355		Howard Watson Adams Clinton	Planing Mill	Churchyard	114
356		Clinton Walton Adams	Nut + Bolt Mfg	Pfleuth & Bowes	250
357		William Monroe Howard Madison	Sausage Factory		6
358		Emslie E	Brewery	Schueler (2)	15
359	52	Detroit William Fillmore Ave	Planing Mill	Klaus + Burk	45
360		Packard	Packing House	J. Dold	60
361			Malt House	J. Lang	40
362		Fillmore St opp. Curtis	Wash + Shirt	Steines	20
363	53	Griffin St Seneca St	Buffalo School	Furnishing Co	225
364		Genesee St in Guilford	Planing Mill	Jaeckle	25
365		2½ mile NE Niagara Sq.	Brewery	Jacob Lang	680
366		Mill St Red Jacket	Forge		50
367		Bond St Addison Alley	Niagara Stamping Wks	Wash Hs	180
					11449

26429

No	Map	Locality	Concern	Owner	(10)
368	54	Jefferson Pasture	Steam Brick Works	Robson	70
369		Belt Handel alley	Brewery	Rochemont	30
370	55	Babcock Elevator	Buffalo Saw Mfg Co		100
371		Plank Rd Buffalo River	Chemical Wks	Scholl Koff	
372		" " Ohio St	Chemical Wks		20
373		" " Buffalo Forting	Chemical Wks		50
374			Packing Wks	Klenick	2 25
375		986 Spencer St	"	Metcalf + Bushing	20
376			Slaughter House	Hollis + Co	60
377		Buffalo River Abbott St	Oil Factory	Evans	15
378		Scott Hamburg	Cement		
379		"	Steam oil works		25
380	56	Previt Plank Rd	Buffalo Lubricating	Oil Wks	
381		Elk St + Creek	Atlas Refining	Co	50
382			Atlas Oil	Wks	40
383	57	Batteria Hamburg + Buffalo River	Union Iron	Wks	
384		" "	Union Bridge	Co	80
385		~~Holmes~~ 4 miles E of City Hall	Holmes + Adams	Oil Wk	45
386	59		Milburn Rendering + Fertilizing		75
387		Blackwell Canal Extra	Buffalo Planing	Mill Co	200
			Lehigh Valley	Coal Elevator	700
388	60		Wagner Palace	Car Co	895
389			Lake Shore Elevator		185
390	61	Hancock + Porter St	~~Hancock~~ Ghris Mfg	Bell Bros	60
391	6		Planing Mill	Bailey Co	
392		Howard + Thomas	Car wheel Wks	Rood + Brown	445
393		Young Over	E. Buffalo Iron	Fargo Tabb + Rood	60
394			Planing Mill	Whistler F. + Sturm	35
395		Morris + Orlando	Genesee Oil Wks		
396		1	Bingham + Taylor	Foundry	25
					~~10084~~
				29499	29499
Buffalo City Water Works					
Thomson Houston		E.R. + P. Co		3	3640
U. S. Electric		R. + P. Co			200
					100
				Total	33439
				H.P. 33439	

[FROM PRINTED EPHEMERA COLLECTION]



DISON TRIUMPHANT.
HIS PATENTS SUSTAINED
BY THE
STATES SUPREME COURT.
THE
ISON ELECTRIC LIGHT Co.
nsure us announcing to its patrons and the general public that the decision of
e Court of the United States, filed on the 21st inst., in the case
of the Bate Refrigerator Company, is in fact a decision
AINING THE EDISON PATENTS.
completely depriving the Defendants of their Sole Defense.
A QUESTION OF FACT.
S, OR WAS NOT EDISON THE ORIGINAL INVENTOR?
ANDESCENT ELECTRIC LIGHTING.
EDISON ELECTRIC LIGHT CO.,
Broad Street, New York.
By EDWARD H. JOHNSON, President.

L. STIERINGER.

E . . . . N TRIUMPHANT!

An Inspirational Rhapsody

IN

SEVEN CANTOS.

TRANSLATED FROM THE JOHNSONESE

BY

W. W.

POET LARIAT.

WITH CAREFULLY SELECTED ILLUSTRATIONS.

TO BE COPYRIGHTED IN THE UNITED STATES, AND IF NECESSARY, IN SAMOA, NEW JERSEY, AND OTHER FOREIGN COUNTRIES.]

INFRINGERS WILL BE PROSECUTED.

PRESS OF GUTENBERG, FAUST & SCHOPFER.

1889.

I.

THE E....n Electric Light Company takes exquisite satisfaction in announcing

To its patrons as well as to so many of the general public as can be induced to believe it,

That the decision of the Supreme Judicial Tribunal of our glorious Republic, on the 21st day of January, In the year of our Lord one thousand eight hundred and eighty-nine,

In the case of the Great Refrigerator Company, is in fact, a decision Resuscitating, elevating, upholding and sustaining the invincible E....nian patents.

II.

IN the multitudinous suits instituted by the E....n
Company in the inferior judiciary tribunals
Against the contumelious and pusillanimous infringers of
the E....nian patents,
The defendants have ever evaded the *merits* of the con-
troversy at issue,
Thus tacitly admitting the *fact* of the infringement com-
plained of,
And have interposed a contemptible plea alleging that our patents have been
rendered moribund

By the mortiferous extinction of patents previously granted by the effete
despotisms of Europe.
Hence the unconscionable delay in establishing our ostentatious pretensions.

III.

. . . . . In the meantime,
Other so-called electrical companies have industriously and indiscriminately
appropriated our devices and *modus operandi*,

Not even having the effrontery to assert that they themselves were the
primeval inventors,
But simply relying upon an unintelligent misconstruction of a statute by
the lower courts, who could not be expected to know any better,
Ruthlessly invalidating our cherished fundamental patents.

IV.

IN pursuance of our oft and vehemently expressed determination

To secure an adjudication upon the very sharpest and most infinitesimal point of law comprehended,

We have had the Great Refrigerator case (covering the identical question as with a four-point blanket) argued

Before the Supreme Court, with the astounding result hereinbefore promulgated,

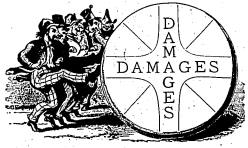
Thus completely depriving the defendants of their sole pretensions to invulnerability.

V.

WE have now only to prove the trifling circumstance of infringement,

Which as everybody knows is the simplest thing in the world,

In order to secure expeditious injunctions against and damages inconceivable



From those who have so long been using with exasperating impunity

That which the most altitudinous authority now concedes to be ours exclusively,

As it was from the beginning, is now, and ever shall be, world without end.

VI.

WE have now simply to establish an indisputable question of fact,

Was, or was not, E.....n the original inventor of the bi-polar molecular disturbance which philosophers term electricity?

This question has been decided in his favor and otherwise times innumerable;

Primarily, by the much enduring U. S. Patent Office, which granted to him patents

For one thing and another, each bearing earlier dates than those which succeeded them,

And subsequently by the various courts of Europe (whose jurisdiction in this Republic was however unfortunately terminated,

By an unexpected occurrence which eventuated on the 4th of July, 1776).

Through the crucial examination whereof the question has many times passed, and one would think ought to have been thereby rendered quiescent forever.

Thus the *questions of law* having now been settled by the Supreme Federal Tribunal,

And the *questions of fact* by the most altitudinously elevated experts of both hemispheres

VII.

THIS Company hereby notifies that aggregation of marines, known as "the public,"

Of its intention to get out the old bazoo once more; to call a halt, and in thunderous tones to demand an instantaneous reckoning

For the outrageous trespass and repudiation of its monopolistic pretensions In Incandescent Electric Lighting.

1889. Electric Light - Armington and Sims (D-89-34)

This folder contains correspondence concerning the steam engines supplied to Edison by the Armington and Sims Engine Co. Among the documents is a letter about the operation of the Edison central station in Philadelphia.

All the documents have been filmed except for duplicate copies of selected documents.

a.45 · N

Henry Howard, Pres't
John W. Danielson, Vice Pres't

Gardner Armington, Treas.
H. C. Granston, Asst Treas.

Gardiner C. Sims, Gen. Manager
Theodore Andrews, Secy.

Armington & Sims

ENGINE COMPANY.

Cable Address:
ARMINGSIMS – PROVIDENCE.

Providence Jan. 19th 1889

Dear Edison

You very kindly sent to me some time ago an estimate of the cost of the transmission of electrical current from Niagara Falls N.Y. to Buffalo. It was for the benefit of "The Niagara River Hydraulic Tunnel, Power and Sewer Co."

Enclosed find explanatory letter from Mr. Alexander D. Porter. I hope you may be able to write such a letter as they desire. They seem determined to push their power project through and as prompt a reply made is what you require, please give them a mark.

Sincerely Yours

Sims

[ENCLOSURE]

OFFICE OF
ALEXANDER J. PORTER,
BUFFALO STREET.

Niagara Falls, N.Y. January 9th 1889

Gardiner C. Hunt Esq
Providence, R.I.

My dear Sir —

Mr. Lockie has asked me to write you, and ask that you be kind enough if it be not inconvenience you, to obtain for the Niagara Company a letter from Mr. Edison, addressed to our Company, giving his views in and testimony to the better practicability of our plans for Electrical transmission &c.

We should like very much indeed to have such a letter with permission to use it and print it in a new Prospectus which is now under way — We should be greatly appreciate anything you can do for us in this matter, Believe me

Very truly Yours

Alex. J. Porter, Esq.
Niagara Falls Hydraulic Power & M'f'g Co.

John E. Greene, Pres't
John H. Brayton, Vice Pres't

Gardiner G. Sims, Gen'l Manager
Manton Sutcliffe, Sec'y

Darius Irmington, Treas.
Jos. E. Greene, Asst Treas.

Armington and Sims

ENGINE COMPANY.

Cable Address:
ARMINSIMS - PROVIDENCE.
Please address all Communications to the Company.

Providence, February 22nd 1889.

Ack. 4/3/89

Dear Edison:-

Enclosed find a gentle reminder of Geo. Washington.

Also report on Speed of our double engine which is connected by flexible coupling direct to your No. 1 Multipolar Marine Dynamo 65 Volts 100 Am. 400 Rev., We have built several Compound Double Engines for the Government. Each pulley have four grooves for 1 1-2 inch cotton rope. Speed about 5000 feet per minute.

An Electrical Paper published in Boston, recently compared our engines in your New York and Philadelphia Stations, with compound condensing engines of the Corliss type, giving preference to the latter. I am quite anxious to read the paper of Prof. Marks at last Edison Convention and get his views. We are constantly on the look out for information on this subject, and find some French Engineers have gone daft on Verticle High Speed

Compound, for connecting direct to dynamo as we have done for Ship lighting, and several have been built for the French Navy. A great claim has been made for this combination, but a letter just received from a prominent engineer who is thoroughly posted as regards continental practice says, " the compound engine which has been all the go in France for electric lighting, is not a success."

I quote from London Engineering, Feb. 8th, 1889 Page 137 on Compound Locomotives.

"A letter from Mr. S.W. Johnson, of the Midland Railway, was first read by the secretary. The writer said he had had no personal experience with compound locomotives, but had watched their development very closely. He found the results such as he would expect to be obtained by higher pressures and greater expansion, even if not accompanied by compounding. He had seen no data by which a comparison could be formed between the respective merits of simple and compound locomotive engines in which the same pressure and same number of expansions had been used in both cases. He considered data otherwise obtained of no value. The increased pressure used in compound engines had resulted in an economy of fuel, b but the real question was, Would that economy have been

obtained had the higher pressure steam been expanded to an equal ratio in an ordinary engine? If this question were answered in the affirmative, where was the advantage of compounding? The writer gave some particulars of coal consumption etc., which had come under his experience in an ordinary engine using steam at a high pressure, and these, it appeared, came out about the same as those recorded in connection with Mr. Webb's compounds.

Enclosed find copy of letter, a practical one on the subject, that is of interest. Much has been said of late on the subject of compounding, without condensing. Our Philadelphia engines will demonstrate which is the best.

Sincerely Yours,

Garrison C. Sinn

[ENCLOSURE]

Q-45.

Providence, R. I., Feb. 11th. 1889.

Report of Test of Armington & Sims Engine for Gun-boat 'Yorktown' by Lieut. T. E. De Witt Veeder, U. S. N.

1st. Test for Regulation of speed at varying loads.

2o per. cent. of Load.	417	Revolutions.
5o " " "	416	"
o " " "	42o	"
75 " " "	416	"
loo " " " (Full Load)	416	"

Variation equal to 4 revolutions equal to 1. per. cent.

2nd. Test of Speed variation for varying boiler pressures and from full load to 2o per. cent. of full load.

Boiler Pressure.	Load.	Speed.
" " 8o lbs.	Full.	415.
" " " "	2o per. cent.	417.
" " 1o5 "	Full.	416.
" " " "	2o per. cent.	42o.

Extreme variation equal to 5 Rev. equal to 1. 25 per. cent.

Frank Bourne.

Edison United Mfg. Co.,

E. Thomas.

Ill. Swiss
we are both a bit
with her with
plans [illegible]
Cant come

Philadelphia Pa.
[illegible] 8 th. 1889

Dear Edison

Jul 11/89

Telegrams from
you are substance con-
-cert information concerning
the views of Prof. Mc Auto
Station and little can be
said in detail.

Constant
running of four dynamos.
with constant current. 70
lamps in circ. from 5 P.M.
to 1 A.M. is the result.

Furnaces of boilers
are run by natural draft
and boilers are satisfactory.
Station is dry, and all joints
are tight. Low water in
[illegible]

You may have heard of our sudden upset of the boiler tubes being burned out. It was not so.

After using shaking grates, firemen forgot to leave them in proper position. The thin projecting fins burned off. Nothing more.

A few seams leaving caused by dirt and exposure from new made enemy. Have given but little trouble and no anxiety.

I regret to say that Prof. Marks had a severe chill 2:30 this morning, but is now better. The usual monthly strain of the past year must manifest itself

Sincerely together with our brief rest, will fortify him in addition to join you in another effort that shall eclipse all others. What shall it be?

Love over and living Bartholow.

Sincerely Yours
Gardiner G. Hubbard

A+S

Providence, R. I., May 24 1889

Copy of Telegram sent you this day at 1.55 P. M. by

W.U. Collect Telegraph Co.

To Edisons Laboratory

Orange N.J.

We ship picture head today Adams Ex.

Reed Hutchinson

Armington & Sims Engine Co.

1889. Electric Light - Edison Electric Light Company - General (D-89-35)

This folder contains correspondence and other documents relating to the business of the Edison Electric Light Co. Included are letters about the technical development of meters, electric wires, and transformers. Most of the correspondence is by W. J. Jenks, director of the company's standardizing bureau.

Approximately 60 percent of the documents have been filmed. The following categories of documents have not been filmed: routine business correspondence regarding orders and meetings; letters of transmittal and acknowledgement.

Edison El. Ill. Co

162

New York, Jan. 3rd. 1889.

A special meeting of the Executive Committee of the Board of Directors of the Edison Electric Light Company was held pursuant to call at the offices of Mess. Drexel, Morgan & Co., on Thursday, Jan. 3rd. 1889, at 10:30 A. M.

Present, Mess. Johnson, Coster, Smithers, Thomas and Smith, and the Secretary and Comptroller.

The Secretary read the minutes of the meetings of Dec. 20th and 27th, respectively, which, on motion duly seconded, were approved.

The Secretary reported that he had seen Prof. Barker who stated that year before last he was guaranteed $50. per day for 100 days or $5,000. for the year in addition to his regular retained of $500.; that last year he consented to a reduction of our guarantee to 50 days because he believed that we would require more than that amount of his time. He claims that he has been called upon for only 42 or 43 days of his time, during the past year and has therefore received only the amount of our guarantee or $2500. He therefore unwilling to accept a guarantee of less than 50 days at $50. per day for the coming year. But, if we prefer, he is willing to waive all guarantee and accept $75. per day for testimony and $50. per day for investigation of patents, experiments and other general work.

On motion of Mr. Coster, duly seconded, the Officers of the Company were authorized to accept whichever of the foregoing propositions our patent counsel may recommend.

The Secretary reported that he had been offered the arc light plant in Elgin, Ills. for $3,000., the plant having a capacity of 55 arc lights with 45 lights connected, and having cost to construct somewhat over $5,000. On motion of Mr. Smithers, seconded by Mr. Smith, it was

RESOLVED, that the Officers be and hereby are authorized to offer $1500. for the plant, but the Comptroller was instructed to negotiate further in the matter with a view either to getting a counter-proposition from the owner of the plant or to arrange for an issue of bonds for the purpose

of acquiring the property, and report thereon to this Committee at a later meeting.

The meeting was then adjoined.

Attest:

Secty.

New York, January 10th 1889.

A special meeting of the Executive Committee of the Board of Directors of the Edison Electric Light Company, was held pursuant to call at the offices of Mess. Drexel, Morgan & Co. on Thursday, Jan. 10th 1889, at 10:30 A. M.

Present, Mess. Coster, Smithers, Thomas and Smith and the Secretary and Comptroller.

Mr. Thomas in the Chair.

The Secretary read the Minutes of the meeting of the 3rd. inst. which were on motion, approved.

The Secretary reported receipt of the following dividends:

$600. second 3% semi-annual dividend from the Washington (D. C.) Company.

$1314.49 being $28^{98}/_{100}$ per cent on $5,000. of our stock in the Kansas City Company, representing the net earnings (from Oct. 1887 until Dec. 1888) of the temporary plant.

$1292. third quarterly dividend (2%) from the Rochester Company.

The Comptroller stated that the contract with A. J. Lawson whereby he took over the business of manufacturing in Canada expired on the 15th inst., and that we have an option of taking over the shop and property at an arbitrated value thereby relieving ourselves of Mr. Lawson's services.

After a general discussion of the subject, it was, on motion of Mr. Coster, seconded by Mr. Smith,

RESOLVED, that the Officers of the Company be and hereby are authorized to avail ourselves of our option to take over the property, in co-operation with the other creditors, at an arbitrated valuation, a new corporation to be formed for that purpose and the stock thereof to be apportioned pro rata among the creditors.

The meeting was then adjourned.

Attest:

Secty.

Edison Electric Lt Co — Convention

EDISON ELECTRIC LIGHT CO.

EDWARD H. JOHNSON, Pres't.
F. S. HASTINGS, Sec'y & Treas.
J. H. VAIL, Gen'l Supt.

EXECUTIVE OFFICES:
16 & 18 BROAD STREET,

Office of the Standardizing Bureau.
Room 68. W. J. Jenks, Director.

SUGGESTIONS FOR EDISON CONVENTION.

New York, Jan. 10, 1889.

Manager Edison Electric Lt. Co.:

Thomas A. Edison Esq
Orange N.J.

DEAR SIR:

I have undertaken to prepare for the February meeting at Kansas City of the Edison Illuminating Companies an evening entertainment, similar to the Lightning Protection talk at Nantasket, illustrated with stereopticon diagrams. In this case, however, the Bureau desires to secure the practical co-operation of all practical men in the business who will send within a week after receiving this letter any notes or accounts of special features of Central Station work not heretofore described, new devices or new methods of using old ones, or statistics of work which they have accomplished, showing the progress of the business in their fields.

Among such contributions may be included, for example, (1) statement of motor work; (2) current sold to telegraph companies or for other special purpose; (3) interesting modifications of the ordinary methods of wiring, as in large buildings; (4) special lighting, as in theatres or public halls where unusual problems of distribution have been met; (5) original or special forms of switches, lightning arresters, ampere-meters, safety catches, &c.; (6) accounts of special difficulties with conductors, like electrolysis or obscure faults.

These descriptions should be accompanied when practicable by India ink drawings or sketches on pure white paper of any convenient size for photographing, say from 6 to 12 inches square, or samples of devices from which slides can be made, or if convenient photographs or lantern slides of standard stereopticon size, three and one-quarter by four inches. If you have any photographs of your station, or can obtain any, showing an outside view and the arrangement of your electrical apparatus, these will prove of great interest to many who have not had an opportunity of visiting you. If you do not wish to part with such photographs and will loan them to us, or will send us negatives from which slides can be made, we will see that they are carefully used and promptly returned.

Your co-operation is earnestly solicited. If you are to be present at the convention, and it is not convenient to send any description at this time, we shall be grateful for a response to this letter, stating that you will be present in person and give a number of slides and accompanying descriptions. Thus we shall know to what extent we may depend upon you for a contribution. If you cannot be present, whatever is sent over your signature will be shown, or read as your contribution.

By many short and interesting paragraphs we hope to greatly enhance the interest of this Convention. You will appreciate the fact that any effort to be available should be prompt.

Please use the enclosed envelope for your reply.

Yours very truly,

W. J. JENKS,
Director.

FROM Leo F. Kennelly.
OFFICE OF
STANDARDIZING BUREAU,
EDISON ELECTRIC LIGHT CO.,
16 & 18 BROAD ST.,
ROOM 68.

MEMORANDUM.

TO

T. A. Edison Esq.
Orange N. J.

Dear Sir — Will you kindly allow Mr. Wirt to bring me Mr. Kennelly's report on the Meter Experiments of which we spoke the other night and which is now on your desk at the Laboratory.

Yours Faithfully
M. J. Jacks.

New York, Jan. 22, 1889.

E.R.B.K. Kansas C.C.

EDISON ELECTRIC LIGHT CO.

EDWARD H. JOHNSON, Pres't.
F. S. HASTINGS, Sec'y & Treas.
J. H. VAIL, Gen'l Supt.
J. H. McCLEMENT, Comptr.

EXECUTIVE OFFICES:
16 & 18 BROAD STREET,

Office of the Standardizing Bureau.
Room 68. W. J. Jenks, Director.

New York, January 22nd '89 188

Thomas A/ Edison Esq.,
Orange, N.J.,

Dear Sir:

Mr. Birdsall who is assisting me by making some slides for the Kansas City Convention, desires the privilege of taking one or two views of the Laboratory, including a view of the Library and perhaps other interior portions. Mr. Birdsall has also arranged to take some slides from some of Mr. Hammer's drawings and apparatus; if it is proper will you kindly allow him to do this work under the guidance of Mr. Hammer whenever he finds it convenient to go out ?

Yours Truly,

W. J. Jenks.

Director.

2/K.85. Kansas City Convention

EDISON ELECTRIC LIGHT CO.

EDWARD H. JOHNSON, Pres't.
F. S. HASTINGS, Secy & Treas.
J. H. VAIL, Genl Supt.
J. H. McCLEMENT, Comptr.

EXECUTIVE OFFICES:
16 & 18 BROAD STREET,

Office of the Standardizing Bureau.
Room 68. W. J. Jenks, Director.

New York, January 28th 188

A.E. Kennelly Esq.,

Orange, N.J.,

Dear Sir:

We would like very much, if it is not too much trouble, to have you write a short paper for the coming Convention, detailing to the best of our present knowledge the proper practice with meter plates and solution to avoid oxidation. This will be a strictly private matter confined to Edison people. If you wish, the information can be given subject to future addition or alteration, but we consider it very desirable that at the Convention we should give some definite idea of what improvements have been made in meter work. Possibly your paper could be read in connection with another one giving additional information as to details of meter work &c.

The Convention is held at Kansas City, Mo., commencing Tuesday February 12th; we expect to leave New York Saturday February 9th.

Yours Very Truly,

W. J. Jenks.

Director.

Canada

EDISON ELECTRIC LIGHT CO.

16 & 18 BROAD STREET,

New York, Feb. 8th 1889.

ans. 12/2/89

Personal.

My dear Mr. Tate:-

Again I am reluctantly obliged to trouble you. In closing a company for Toronto, Canada, I have had occasion to spend a couple of days with a Mr. Nicholls and a Mr. Carr of that City. I have shown them everything that is to be seen here but before returning to Toronto they were very anxious to see Mr. Edison and the Laboratory. I satisfied them that the corner would be impossible, and then as a last resort, agreed to give them a letter to you. I am very sorry indeed to trouble you in the matter but I am sure that a few minutes time with them will be well spent and inasmuch as you are acquainted in Toronto I presume on your good nature in giving them this letter. They will probably call upon you tomorrow, Saturday morning.

Very sincerely ypurs,

F. S. Hastings.

Secty & Treas.

A. O. Tate, Esq.

The Laboratory,

Orange, N. J.

Coredon

EDISON ELECTRIC LIGHT CO. 16 & 18 BROAD STREET,

New York, Feb. 8th 1889.

A. O. Tate, Esq.
Edison's Laboratory,
Orange, N. J.

My dear Mr. Tate:-

I take pleasure in introducing to you Mr. Nichols and Mr. Carr of Toronto. These gentlemen are interested in the proposed Edison central station Company for Toronto and are desirous of learning as much of our system as possible during their visit to this City. Any courtesies extended to them will be regarded as a special favor both by Mr. Johnson and

Yours very truly,

F. S. Hastings

Secty & Treas.

T. to. L. 6.

EDISON ELECTRIC LIGHT CO.

16 & 18 BROAD STREET.

New York, Feb. 13th 1888. *188*

My dear Mr. Tate:-

I am in receipt of your favor of the 12th inst. and I desire to express my sincere thanks for your courtesy to our Toronto friends. I shall hope at some to have an opportunity to reciprocate.

Did you ever succeed in getting the original draft of those Minutes from Mr. Edison?

Yours very truly,

Sec'ty & Treas.

To A. O. Tate, Esq.

Edison's Laboratory,

Orange, N. J.

E. E. L. Co.

EDISON ELECTRIC LIGHT CO.

EDWARD H. JOHNSON, Prest.
P. S. HASTINGS, Secy & Treas.
J. H. VAIL, Genl Supt.
J. H. McCLEMENT, Comptr.

EXECUTIVE OFFICES:
16 & 18 BROAD STREET,

Office of the Standardizing Bureau.
Room 68. W. J. Jenks, Director.

New York, ~~Feb. 10th, 1889.~~ 188

T.A. Edison, Esq.
Edison Laboratory,
Orange, N.J.

Chas. Kennelly

Dear Sir:-

About ten days ago I wrote , at Mr. Wirt's suggestion, to Messrs. Bergmann & Co. stating that you were desirous of making an experiment of casting moter plates, and asked if they could send you some material which could be used for that purpose. In their reply under date of Feb. 9th. they suggest that you send them a requisition for such a quantity of zinc as you may need for this experiment.

We have already sent to Messrs. Bergmann & Co. an outline of a modified moter plate, giving new dimensions in some respects; but this your Mr. Kennelly is familiar with.

Yours very truly,

W. J. Jenks.
Director.

10 lbs Zinc ordered from Bergmann's on reception of this by Mr Stibbs 21. 2. 89. a.c.K.

Meter

EDISON ELECTRIC LIGHT CO.

EDWARD H. JOHNSON, Pres't.
F. S. HASTINGS, Sec'y & Treas.
J. H. VAIL, Gen'l Supt.
J. H. McCLEMENT, Comptr.

EXECUTIVE OFFICES:
16 & 18 BROAD STREET,

Office of the Standardizing Bureau.
Room 68. W. J. Jenks, Director.

New York, ~~Feb. 10th. 1889.~~ 188

A.E. Kennelly, Esq.
Care Edison Laboratory,
Orange, N.J.

Dear Sir:-

I have read your report on meter experiments with the deepest interest; there are many points upon which I think we ought to have a most careful discussion.

At the Convention the point was made that it is now of the greatest importance to the stations to have a meter which will show the total current output. The ampere indicators do not in all respects fill the bill, and I am told by station managers that they do not check with the meters of the dynamos. Moreover, as such a meter is an indicator merely and does not register, it requires many observations during the twenty-four hours to get the average of the energy expended.

Please give me a little more clearly your idea of the connections of the silver meter which you propose, and whether you think it possible to connect such a meter without introducing a very large and expensive resistance.

Yours very truly,

W. J. Jenks.

Director.

EDISON ELECTRIC LIGHT CO.

EDWARD H. JOHNSON, Prest.
F. S. HASTINGS, Secy & Treas.
J. H. VAIL, Genl Supt.
J. H. McCLEMENT, Comptr.

EXECUTIVE OFFICES:
16 & 18 BROAD STREET,
New York,

March. 1st. 188

Office of the Standardizing Bureau.
Room 68. W. J. Jenks, Director.

A. E. Kennelly. Esq.
Edison Laboratory.
Orange. N. J.

Dear Sir:

Permit me to thank you for your careful letter of Feb. 28 as to Central Station Meters. Also for figures giving results of your test on the 700 light Meter submitted by Bergman & Co.- Both of these, together with your exhaustive report to Mr. Johnson, will be brought up at ~~the~~ a special Session of the Bureau, to be held as soon as it is possible to gather a number of able men who can discuss these matters intelligently.

I have studied these matters and recommendations with the deepest interest, and I believe they point out all the essential changes which should be made.

Very truly Yours,

W. J. Jenks.

Director.

E&H G

Edison Electric Light Co.

GENERAL SUPERINTENDENT'S OFFICE,
Room 53,
DEPARTMENT OF ENGINEERING,
and
CENTRAL STATION CONSTRUCTION.

EDWD. H. JOHNSON, Pres't.
F. S. HASTINGS, Sec'y and Treas.
J. H. VAIL, Gen'l Supt.
J. H. McCLEMENT, Compltr.

Executive Offices,
16 and 18 Broad Street,
New York,

March. 1st. 1889

Ans. 3/9/89

Laboratory of Thomas, A. Edison.
Orange. N.J.

Gentlemen:

In answer to yours of Feb. 14th the slides you have sent us were used at Kansas City as a matter of general educational interest to the Managers of the Illuminating Companies. They will be retained in this Department for like uses hereafter.

In case the people of the Laboratory should hold meetings or evening sessions similar to those of last year, or in any other similar instances, I shall be glad to contribute the use of these and about Two or Three Hundred others, if you will furnish the lantern.

I have been called upon in consequence of having shown these in Kansas City to supply a Western lecturer ~~for~~ with views for his collection.

Under these circumstances if you consider it right that the Light Co, should pay for these slides, please send us a bill.

Very truly Yours,

M. J. Jacks.

Director.

Mads-

Edison Electric Light Co.

GENERAL SUPERINTENDENT'S OFFICE,
Rooms 53,
DEPARTMENT OF ENGINEERING,
and
CENTRAL STATION CONSTRUCTION.

EDWD. H. JOHNSON, Pres't.
F. S. HASTINGS, Sec'y and Treas.
J. H. VAIL, Gen'l Supt.
J. H. McCLEMENT, Compltr.

Executive Offices,
16 and 18 Broad Street,
New York, March 12th, 1889

Mr A. E. Kennelly,
Edison Labratory,
Orange, N. J.

Dear Sir:-

Mr Johnson has instructed me to have another edition of 5000 copies of the Meter pamphlet printed for Mr. Hammer's order at Paris. I propose to add an appendix containing a record of the recent changes made in consequence of your researches. I also wish to add one or two points of interest; among them a mention of the small amount of energy expended in the registration of the Edison meter. I shall consider it a personal favor if you will glance through the pamphlet to refresh your memory, and suggest to me any other features of interest which should be enlarged upon, or which, perhaps, have been entirely overlooked in the preparation of the paper, as I am anxious that in sending out this edition to Europe we may say all that we can in favor of the chemical system.

Very Truly Yours,

W. D. Jenks.
Director.

Edison Electric Light Co.

GENERAL SUPERINTENDENT'S OFFICE,
Rooms 53,
DEPARTMENT OF ENGINEERING,
and
CENTRAL STATION CONSTRUCTION.

EDW'D. H. JOHNSON, Pres't.
F. S. HASTINGS, Sec'y and Treas.
J. H. VAIL, Gen'l Supt.
J. H. McCLEMENT, Compr.

Executive Offices,
16 and 18 Broad Street,
New York, March 16th, 1889

Aves. 22/3/89

Edison's Labratory,
Orange,
N. J

Mr. Kennedy

Gentlemen:-

Our attention has been called by a representative of the firm of Edes, Mixter & Heald, Plymouth, Mass., to the low price which they quote for chemically pure zinc, namely, 7 1-2 cents. We are about to recommend that all meter plates in future be made at the Labratory, as we understand your facilities there, which have been somewhat expensive to you, are ample for the production of any desired number of meter plates amalgamated according to the new process. It, therefore, occured to us that possibly this quotation may be of interest to you.

Very Truly Yours,

W. J. Jacks.
Director.

We shall be ready to cast the new patterns zincs whenever notified to do so. Also Mr English is procuring samples of above pure zinc which we will analyze and

H. Co

EDISON ELECTRIC LIGHT CO.

EDWARD H. JOHNSON, Presi.
F. S. HASTINGS, Secy & Treas.
J. H. VAIL, Gen'l Supt.

EXECUTIVE OFFICES:
16 & 18 BROAD STREET.

Office of the Standardizing Bureau.
Room 68. W. J. Jenks, Director.

New York, April 2nd, 1889.

Mr A. E. Kennelly,

Edison's Laboratory,

Orange, N. J.

Dear Sir:-

The fact has been brought to my notice that the table showing sizes and conductivity of wire of the Edison Standard Guage is based upon chemically pure copper, and that something predicated upon a commercial standard would undoubtedly be more servicable and less likely to mislead constructors. Also that the curve showing the carrying capacity might well be reviewed and possibly corrected. I have asked Mr Vail what his judgement is as to the percentage of the conductivity of pure copper which he thinks we can hope to secure as a matter of actual practice. His reply is "96 to 97%."

I think, therefore, if a table could be formulated on the basis of 97% purity it would be an important addition to our information and literature in this respect.

It seems also that some definite arrangement should be made by which tests of the copper provided by the manufacturers should be frequently carried on that there may be no question as to the absolute carrying capacity of conductors installed in all

~~percentages~~ branches of our business.

The Bureau would be glad to receive your advice on these points, and,(if not asking too much) such assistance in a practical way as you may be able to give consistent with your many duties.

Yours truly,

W. J. Spillman.

Director.

Dynamo

EDISON ELECTRIC LIGHT CO.

EDWARD H. JOHNSON, Pres't.
F. S. HASTINGS, Sec'y & Treas.
J. H. VAIL, Gen'l Supt.

EXECUTIVE OFFICES:
16 & 18 BROAD STREET,

Office of the Standardizing Bureau.
Room 68. W. J. Jenks, Director.

New York, April 8th, 1889.

Thomas A. Edison, Esq.,
Orange, N. J.

Dear Sir;-

Mr. Johnson has thus far preferred that nothing should be said definitely regarding our ability to transform from high to low potential for central station work until we received your assurance that apparatus could be given at short notice.

Aside from the special application, about which we consulted you some weeks ago relative to the transmission of power, there has come a demand for direct current rotary transformers from 1000 volts to 100, and one of the agents of the United Company will call here to-morrow(Tuesday) to secure definite information as to whether we can promise him a transformer of this kind of a capacity of 500 16 candle power lamps, within three months. If he can secure this assurance he can immediately close a Municipal plant, and in doing so sell a dynamo on the basis of this increased output in addition to the Municipal lighting which is desired, low pressure lamps to be located about three miles from the source of power.

Please give us definite information if you can, and also

EDISON ELECTRIC LIGHT CO.

EDWARD H. JOHNSON, Pres't.
F. S. HASTINGS, Sec'y & Treas.
J. H. VAIL, Gen'l Supt.

EXECUTIVE OFFICES:
16 & 18 BROAD STREET,
New York, ... 1889.

Office of the Standardising Bureau.
Room 68. W. J. Jenks, Director.

the efficiency of a transformer upon which we can estimate the sizes of conductors and approximate cost of installation.

Will it be safe to estimate the first cost of small transformers of this kind at as low a price as a dynamo of equal watt capacity ?

Yours very truly,

W. J. Jenks

Director

Meter

EDISON ELECTRIC LIGHT CO.

EDWARD H. JOHNSON, Prest.
F. S. HASTINGS, Sec'y & Treas.
J. H. VAIL, Gen'l Supt.

EXECUTIVE OFFICES:
16 & 18 BROAD STREET.

Office of the Standardizing Bureau.
Room 68. W. J. Jenks, Director.

New York, April 10th, 1889.

Thomas A. Edison, Esq.,
Orange, N. J.

Ans. 16/4/89

Dear Sir;-

We are now called upon to send out some directions for the new method of treating Meter solution, and the question arises whether there is anything patentable about it.

Please write us whether this matter has been considered.

Yours very truly,

W. J. Jenks.
Director.

K. what change is patentable?

Dynamos

Edison Electric Light Co.

GENERAL SUPERINTENDENT'S OFFICE,
Room 53.
DEPARTMENT OF ENGINEERING,
AND
CENTRAL STATION CONSTRUCTION.

EDWD. H. JOHNSON, Pres't.
F. S. HASTINGS, Sec'y and Treas.
J. H. VAIL, Gen'l Supt.
J. H. McCLEMENT, Comptr.

Executive Offices,
16 and 18 Broad Street,
New York, April 10th, 188 9.

Thomas A. Edison, Esq.

Orange, N. J.

Dear Mr. Edison : -

Referring to your letter of February 23rd. regarding extension of circuit at Spokane Falls, W. T. I am advised that the Spokane Falls Co. are going to run their dynamos entirely by water power.

Would it not be practicable to work two different styles of dynamos into the same general system of mains ?

Let the 125 Volt dynamos for the district near the station have the ordinary drop of from 10 to 12 % on feeders; the dynamos for the outlying district be of higher voltage, 160 Volt giving greater drop on feeders, but so proportioned as to give the same voltage at the junction of feeders with mains.

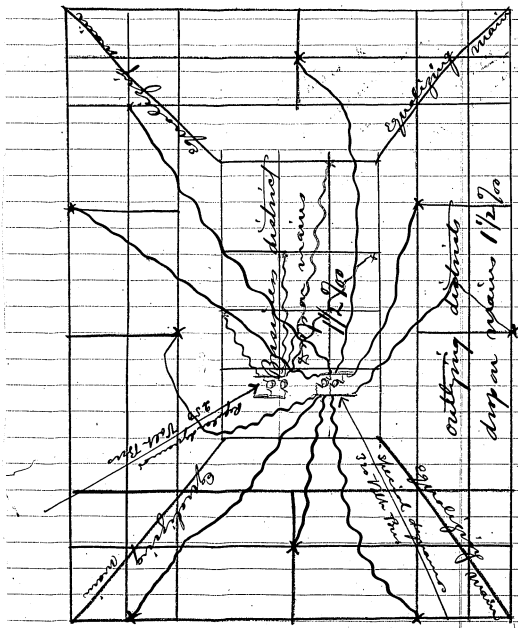
I enclose you diagram which I think will bring out more clearly what I have in mind. This plan would save copper, and this copper item is the important one that embarasses the Company at Spokane Falls. I would very much appreciate, if you will kindly look into this and send me your views as early as possible.

Yours truly,

J. H. Vail
Gen. Supt.

[ENCLOSURE]

Lamps 108 Volts regular 3 wire system.
12.9% drop on 250 V. feeders
31 % " " 320 V. "


Cutting distant down mains 1½ to
Cutting distant down mains 1½ to
Cutting distant down mains 1½ to

EH, Co.

EDISON ELECTRIC LIGHT CO.

EDWARD M. JOHNSON, Prest.
F. S. HASTINGS, Secy & Treas.
J. M. VAIL, Gen'l Supt.

EXECUTIVE OFFICES:
16 & 18 BROAD STREET.

Office of the Standardizing Bureau.
Room 68. W. J. Jenks, Director.

New York, April 20th, 1889.

Mr. A. E. Kennelly,
Edison's Laboratory,
Orange, N. J.

Dear Sir:-

A new set of Rules is to be adopted next week by the New England Insurance Exchange, -- the most important to our business of any body of Insurance men in this country. They desire to publish a curve showing the safe carrying capacity of wires drawn to Brown & Sharp Gauge, based on 90% conductivity, as being in all respects a safe limit. This is in the line of experiments which some weeks ago we had some correspondence about.

Can you indicate to me any method by which, from existing data, this curve may be formulated so as to be of service at the meeting called for final discussion of this matter, in Boston on Saturday next, (April 27th) ? Capt. Brophy is very desirous of being able to show at that time something which shall be sufficiently accurate for the purposes of the Exchange in ~~xxxxing~~ the work of inspecting the installations of the wiring companies.

Yours very truly,

W. J. Jenks

Director

EDISON ELECTRIC LIGHT CO.

EDWARD H. JOHNSON, Pres't.
F. S. HASTINGS, Sec'y & Treas.
J. H. VAIL, Gen'l Supt.

EXECUTIVE OFFICES:
16 & 18 BROAD STREET,

Office of the Standardizing Bureau.
Room 68. W. J. Jenks, Director.

New York, April 22nd, 1889.

Thomas A. Edison, Esq.,
Orange, N. J.

Dear Sir:—

Will you kindly consider with care the correspondence here enclosed ?

The call for some sort of a direct current transformer is getting louder and louder every day. You will notice Mr. Knudsen's statement of what the Machine Works are ready to do, and what Mr. Johnson is ready to indorse, provided you deem it best that for the present we shall use this apparatus, already practically perfected instead of waiting for the time when your many duties and other interests will allow of the development of the new type which we hope to receive in due season.

Yours very truly,

W. J. Jenks
Director.

Enclosures.

E&LC

EDISON ELECTRIC LIGHT CO.

EDWARD H. JOHNSON, Pres't.
F. S. HASTINGS, Sec'y & Treas.
J. H. VAIL, Gen'l Supt.

EXECUTIVE OFFICES:
16 & 18 BROAD STREET,
New York, May 3rd 1889.

Office of the Standardizing Bureau.
Room 68. W. J. Jenks, Director.

Thomas A. Edison, Esq
Orange, N. J.

Dear Sir—

Kennelly do N
Put in time
Sate

I enclose copy of a letter sent to Mr Johnson April 26th, referring to the tests of Conductors outlined in a letter addressed to Mr. Kennelly April 20th, to which he replied April 22d. This correspondence will I think explain with sufficient clearness what Mr. Kennelly evidently thoroughly understands, that is the desire of the Light Company to obtain data as to the safe-carrying capacity of copper conductors of 97% conductivity, together with other figures representing say 90% conductivity which may be incidently derived.

Please have Mr. Kennelly make for the Light

EDISON ELECTRIC LIGHT CO.

EDWARD H. JOHNSON, Pres't.
F. S. HASTINGS, Sec'y & Treas.
J. H. VAIL, Gen'l Supt.

EXECUTIVE OFFICES:
16 & 18 BROAD STREET,
New York, 1889.

Office of the Standardizing Bureau.
Room 68. W. J. Jenks, Director.

Company such tests as are necessary to settle these questions.

Very Truly yours
W. J. Jenks,
Director.

[ENCLOSURE]

(copy)

April 26th, 1889.

Mr. Johnson:--

This matter of the safe carrying capacity of wires of different sizes is well worthy of an investigation in the light of what Mr. Kennelly says. The tables thus far issued by the Light Company show the carrying capacity at a certain specified temperature and not the safe limit with a rise in temperature of a given number of degrees above that of the surrounding air.

You will notice that Mr. Vail is also desirous to complete the collection of whatever information we can secure on this subject.

It is particularly important that a table be made showing these figures with 97% conductivity of copper, and that in our future work arrangments should be made with the companies producing wire so that samples of their copper can be tested by us from time to time to determine whether we are treading on safe ground.

Do you authorize a request to Mr. Edison on the part of the Light Company ?

Yours Very Truly,

W. J. JENKS,

Director.

W. J. Jenks:

YES.

E. H. Johnson,
Pres't.

Meters

EDISON ELECTRIC LIGHT CO.

EDWARD M. JOHNSON, Pres't.
F. S. HASTINGS, Sec'y & Treas.
J. H. VAIL, Gen'l Supt.

EXECUTIVE OFFICES:
16 & 18 BROAD STREET,
New York, May 8th, 1889

Office of the Standardizing Bureau.
Room 68. W. J. Jenks, Director.

REMOVED TO 44 Wall St.

ORE

Thomas A. Edison, Esq.,
Orange, N. J.

Dear Sir;--

Please have Mr. Kennelly work out into practical form the ideas embodied in a recent letter to us as to Electrolytic Motors for the measurement of the total current of central stations.

Mr. Wirt and Mr. White will take occasion to have an early conference with Mr. Kennelly on this subject.

Yours very truly,
W. J. Jenks.
Director.

Approved
Jas. Ambler

CCL F

EDISON ELECTRIC LIGHT CO.

EDWARD H. JOHNSON, Prest.
F. S. HASTINGS, Sec'y & Treas.
J. H. VAIL, Gen'l Supt.

REMOVED FROM EXECUTIVE OFFICES:
44 Wall St.
16 & 18 BROAD STREET.

Office of the Standardizing Bureau.
Room 68. W. J. Jenks, Director.

New York, May 14th, 1889

Kennelly to Refer When to Marshall the Cardenas Man

Thomas A. Edison, Esq.,
Orange, N. J.

Dear Sir:--

Will you kindly tell us about what you think a Lightning Arrester will cost to have 1 microfarad capacity and stand 1200 V. pressure, as called for for lightning protection ?

Yours very truly,
W. J. Jenks.
Director.

N. Marshall
University Building
Cor Waverley Place
N. Y.

EDISON ELECTRIC LIGHT CO.

REMOVED TO 16 & 18 BROAD STREET,
44 Wall St.

New York, May 20th 1889.

My dear Mr. Tate.-

It is of the greatest importance that we get hold of the extracts from the English papers sometime during the year 1878, containing the announcement upon which the great fall of English Gas shares took place. The attached letter from Mr. Lowrey to Mr. Johnson will explain. If you can in any way assist the bearer in hunting up this publication in your scrap books we shall be greatly obliged.

Yours very truly,

A. Hastings

Secty & Treas.

To A. O. Tate, Esq. Private Secretary,
The Laboratory,
Orange, N. J.

May 21 | 89

Light Co

J. HERON CROSMAN,
INVESTMENTS,
ELECTRIC GOLD AND STOCKS,
72 & 74 Broadway.

New York, June 10th 1889.

E. H. Johnson Esq
Pres't. Edison Electric Light Co.
City

Dr. Sir:

I send you herewith a sample Incandescent Lamp of the Rochester Co. I control the Company but it is for sale. Do you care to look into it - with a view to purchase?

This claimed to be a better Lamp than any now made. Shape & Candle Power will obey your Mark. Yours Truly

J. Heron Crosman

T. A. Edison Esq

Under the new order of things the Board Constitutes you the umpire in all such Matters as this - You are to say whether it is desirable to buy - and the Light Co will then Give Order The Loomis Pat. will be bought On your recommendation

Yours Truly

E. H. Johnson

Meter

EDISON ELECTRIC LIGHT CO.

EDWARD H. JOHNSON, Pres't.
F. S. HASTINGS, Sec'y & Treas.
J. H. VAIL, Gen'l Supt.

EXECUTIVE OFFICES:
44 WALL STREET.

Office of the Standardizing Bureau.
Room 71. W. J. Jenks, Director.

New York, June 11, 1889.

Mr. Kennelly,

If you are not using the two #4 standard meters, which I understand you have; will you please send them to Paterson at your early convenience, as I would like to use them in checking results with the experimental meters.

In the bottle resistance tests at Paterson I obtained, with

		#2 japanned plate	#2 plain plate
First set	1.	2.95 ω	1.7 ω .20 hours
21 h.	2.	3.50 ω	2.2 ω Continuous Run.
Continuous Run.	3.	2.64 ω	1.64 ω
Second set	1.	2.26 ω	
47 h.	2.	3.93 ω	
Continuous run.	3.	2.23 ω	
		17.51	
		2.92	

Very Truly,

R. D. Mahler

Light Co

J. HERON CROSMAN,
INVESTMENTS,
ELECTRIC BOND AND STOCKS,
72 & 74 Broadway.

Edison E.L.Co.

NEW YORK, June 12 1889.

Edw. H. Johnson Esq. Pres.
164 & 166 Broad St.
City

Dr. Sir:

Your note of this date rec'd.

The claims of the "Backstown Lamp Co. are, I am sorry to say, to manufacture — costing them only 16 cents each; & that they last much longer than any other lamp. They guarantee them for 600 hours. They want either to sell out entirely, or capital to increase their business. They are selling all they can make at a good profit.

Respy. J. Heron Crosman

2842

EDISON ELECTRIC LIGHT CO.

REMOVED TO 16 & 18 BROAD STREET.
44 WALL ST.

New York, June 25th. 1889 *188*

Mr. Thomas A. Edison,

Orange, N. J.

Dear Sir : -

I have your esteemed favor of June 24th, and thank you for the same. I have mailed it to our General Agent, who has been instructed to employ four or more solicitors under his general direction.

The Board received my report very kindly, and, while as yet unwilling to reduce prices are very anxious to have a vigorous campaign inaugurated in the solicitation of light.

With thanks for your thoughtful courtesy, I am

Most truly yours,

Engineer in Chief.

EEL Co

EDISON ELECTRIC LIGHT CO.

EDWARD M. JOHNSON, Pres't.
F. S. HASTINGS, Sec'y & Treas.
J. H. VAIL, Gen'l Supt.

EXECUTIVE OFFICES.
44 WALL STREET.

Office of the Standardizing Bureau.
Room 71. W. J. Jenks, Director.

New York, July 2nd, 1889.

Thomas A. Edison, Esq.,
Orange, N. J.

Dear Sir:-

Several weeks ago we sent you details of an estimate on a proposed water power for the Lachine Rapids. If you can so far review this as to either endorse or criticise it, it will very much assist us in dealing with problems of this class, two or three of which are now presented to us.

Yours very truly,
W. J. Jenks.
Director.

Forwarded Papers ~~referred~~ to Mr Smith from Mr Jenks. July 15/89.

Mr Gunn
This is down
Stairs I think
in my desk
in my Chicago -Ford
has it E

EDISON ELECTRIC LIGHT CO.

EDWARD H. JOHNSON, Pres't.
F. S. HASTINGS, Sec'y & Treas.
J. H. VAIL, Gen'l Supt.

EXECUTIVE OFFICES:
44 WALL STREET.

Office of the Standardizing Bureau.
Room 71. W. J. Jenks, Director.

New York, July 2, 1889.

T. A. Edison,

Dear Sir:-

With this we send a lamp from the Eagle Oil Company, showing possibly a leakage of oil or inflammable gas into the vacuum space.

Please write us whether this represents a difficulty which is likely to occur in places where inflammable gases may exist.

Yours truly,

W. J. Jenks.

Director.

Letter answered 8. VII. 89.
for Mr Edison a. E. K.

[ENCLOSURE]

Eagle Oil Company

26 Broadway

Chas. E. Burke, President.

New York, July 1st 1889.

RECEIVED.
JUL 2 1889

The Edison United Electric Light Co.

Gentlemen.

We hand you herewith a lamp that was taken out of our cellar at our Works Communipaw N.J. the lamp when taken out was not broken but it, being so frail, broke in handling, after removal. The man in charge says, his attention was called to this lamp by its bright appearance, and that he at once ordered the Engine stopped. We send it to you for suggestion as to the cause, and remedy, as a fire in that part of our factory would cause us a large loss. Please let us hear from you.

Yours truly
Eagle Oil Co.
By C C Burke

E C H Co.

EDISON ELECTRIC LIGHT CO.

EDWARD H. JOHNSON, Prest.
F. S. HASTINGS, Sec'y & Treas.
J. H. VAIL, Gen'l Supt.

EXECUTIVE OFFICES
44 WALL STREET.

Office of the Standardizing Bureau.
Room 71. W. J. Jenks, Director.

New York, July 10th 1889.

Edison Laboratory,
Orange, N. J.

Gentlemen:-

We have not received bill for expense of recent meter experiment. You will call to mind the instructions given to the Standardizing Bureau, several months ago, making our approval of bills for experimental work, conditional upon the rendering of those bills during the first ten days of the month following that during which the bills were contracted. This conditional arrangement was assented to by you in writing. We are also doing this work under a limitation of expense; and in order to know how much farther we can go in the matter, it is necessary to get your bills to date.

Yours truly,

W. J. Jenks.
Director

meters

EDISON ELECTRIC LIGHT CO.

EDWARD H. JOHNSON, Prest.
F. S. HASTINGS, Sec'y & Treas.
J. H. VAIL, Gen'l Supt.

EXECUTIVE OFFICES,
44 WALL STREET.

Office of the Standardizing Bureau.
Room 71. W. J. Jenks, Director.

New York, July 18th 1889.

A. E. Kennelly,

Edison Laboratory.

Dear Sir:-

You will remember that at the bureau meeting of March 9th., it was resolved on motion of Mr. Beggs, that meters of larger capacity be developed for the use of central stations; and that the investigation relative to these and meters for the total measurement of ~~ampere~~ output in the station itself be continued with a view of demonstrating the practicability of using the chemical system throughout. In pursuance of those motions the continuance of our work in these directions was authorized by Mr. Johnson March 20th. In addition to this a special request from the Bureau, countersigned by Mr. Mc Clement, was sent to the laboratory under date of May 8th. I presume you may not have had an opportunity to arrive at any definite conclusion, satisfactory to yourself as regards either of these matters. We are however, now obliged to make some recommendations at once to the Brooklyn, New York and Boston stations, as to the construction of ~~three~~ a No. 32, and a No. 64 meter. It is not desirable that they should be encouraged to order what might be termed experimental apparatus,

EDISON ELECTRIC LIGHT CO.

EDWARD H. JOHNSON, Prest.
F. R. HASTINGS, Sec'y & Treas.
J. M. VAIL, Gen'l Supt.

EXECUTIVE OFFICES:
44 WALL STREET.

Office of the Standardizing Bureau.
Room 71. W. J. Jenks, Director.

New York, 1889.

neither are we as at present, informed, in position to indicate definitely, specifications for standard meters of these sizes. Under these circumstances please advise us what size plates you would consider best for use with 2, 3, or 4 No. 16 shunts connected in multiple. If there are to be two sizes of plates a convenient and perhaps practical dividing line may be made between the No. 16, and the No. 32, or to apply to all meters above a No. 16, whatever their capacity. We are now advising New York and Brooklyn to order meters for several hundred lamps with four No. 16 shunts in multiple arc, and if you will indicate to Mr. White, preferably in writing, your judgment as to the size of plate which may be for the present adopted, we will endeavor to agree here in the office, to unite with you in a decision which shall make the selected size at least a temporary standard.

Yours truly,

W. J. Jenks.

Director

That all meters above 160 lights on a side should have one practical test before leaving makers hands.

FE LI Co.

EDISON ELECTRIC LIGHT CO.

EDWARD H. JOHNSON, Prest.
F. S. HASTINGS, Sec'y & Treas.
J. M. VAIL, Gen'l Supt.

EXECUTIVE OFFICES:
44 WALL STREET.

Office of the Standardizing Bureau.
Room 71. W. J. Jenks, Director.

New York, July 18th 1889.

A. E. Kennelly Esq.

Edison Laboratory.

Dear Sir:-

Mr. Wirt has informed me that you are now prepared to make a report as to the question of conductivity of wires. I should esteem it a favor, and am sure it would add greatly to the interest of the convention, if you would make this report in such form as that in addition to it being a statement to the Bureau, of the work done, it can be read either as a whole or in part as a paper at the association meeting, August 13th. I think it would also add very greatly to the interest of that convention, if you could be present and if you desire, will try and bring it about by an appeal to Mr. Edison, through the officers of this company. Of course you may have other plans, either for going there, or for work which would prevent your attendance. We are now working very earnestly to arrange a programme, which will make this meeting the most successful yet held.

Yours truly,

W. J. Jenks.

Director.

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EDISON ELECTRIC LIGHT CO.

EDWARD M. JOHNSON, Prest.
F. S. HASTINGS, Sec'y & Treas.
J. M. VAIL, Gen'l Supt.

EXECUTIVE OFFICES:
44 WALL STREET.

Office of the Standardizing Bureau.
Room 71. W. J. Jenks, Director.

New York, July 22nd, 1889.

Mr. A. E. Konnelly,
Edison's Laboratory,
Orange, N. J.

Dear Sir:-

I am very much gratified that you will be able to attend the Convention, as stated in your letter of July 19th. I think you will be not only interested yourself, but able to give to the station people there ideas that will be valuable to the Convention.

Yours very truly,

W. J. Jenks.
Director.

46

EDISON ELECTRIC LIGHT CO.

EDWARD H. JOHNSON, Pres't.
F. S. HASTINGS, Sec'y & Treas.
J. H. VAIL, Gen'l Supt.

EXECUTIVE OFFICES:
44 WALL STREET.

Office of the Standardizing Bureau.
Room 71. W. J. Jenks, Director.

New York, August 3rd, 1889.

Mr. A. E. Kennelly,
Laboratory of Thomas A. Edison,
Orange, N. J.

Dear Sir:

Mr. Wirt has brought to me your suggestion that the Bureau state something limiting the temperature for conductors. I think, with him, that your paper will have more force without any comment on the part of the Bureau, but with the understanding that its lessons will be brought up in the future business of the Company.

Yours very truly,

W. J. Jenks.
Director.

Zinc Solution

EDISON ELECTRIC LIGHT CO.

EDWARD H. JOHNSON, Pres't.
F. S. HASTINGS, Sec'y & Treas.
J. H. VAIL, Gen'l Supt.

EXECUTIVE OFFICES:
44 WALL STREET.

Office of the Standardizing Bureau.
Room 71. W. J. Jenks, Director.

New York, Aug 22d 1889. 1889.

The Edison Laboratory,

Orange N.J.

Gentlemen/

Will you fix a price on the new meter solution? We believe more than ever that it will be very desirable that you should supply this and we shall recommend it to be obtained from you. It appears that the cost of the /salt in the new solution at 15 cents a pound is about 1/2 cent for each bottle. This being such a small item it appears to be worth all that it can cost to have you prepare the solution with all possible pains and then to throw it away after it has been used once. One gallon will fill about 90 bottles. This would seem to be enough to put in one pkg. Gallon bottles can be handled easier than carboys, and will have a value after use. You will be able to acidify the solution to just the right point, which is a thing that we would never be able to advise the meter man to do. We believe that you having charge of the plates and the solution /will put the responsibility where it belongs for the particular part of the meter system, leaving only the plain and simple part for the meter man. It appears that there is still at least a little uncertainty about these two factors which/ with your help should be made to disappear in time.

Yours very truly, W. J. Jenks Director.

30 Cents per gallon
bottles to be charged for
& freight paid by receiving station

EGEC

EDISON GENERAL ELECTRIC CO.
~~EDISON ELECTRIC LIGHT CO.~~
STANDARDIZING BUREAU.

44 WALL STREET,

New York, ~~Sept. 18th 1889.~~ 18

Mr. Charles B. Batchelor,

,Edison Laboratory,Orange N.J.

Dear Sir;

In answere to yours ofthe 16th inst. I would say that my discussion of the motor dynamo was rather illustrative than statistical. Still as to the cost of power, I got what information I could from the data of the engineering dept. and from such men as Mr. Beggs, Mr. Edgar, and Wilson Howell,- and I meant to take a figure that would be near the average for Edison stations. From the reports of six stations in different parts of the U.S. I got the average cost of COAL only for one electrical HP hour on the station bus ,equal to one cent almost exactly. Accepting this result as fair, it remains to add the proper amount for all the other expenses of the station which go to make the cost of the energy delivered. These vary immensely in different stations. The extreme variation in the outpur is what brings up the figure so high. I do not pretend that my figure of 4 cents is made up from analysis of statistics. It is not. No two people seem to be agreed as to just what items should be charged against the cost of energy delivered. I considered that for the purpose of the motor dynamo the energy would be called for principally during the hours of heavy load. It is not a levelling up, of the load line, it is an addition to the height.

Of c ourse in some cases the result would be only a small addition to the cost of operation outside of fuel. However for the purpose I considered it fair to allow that the increased cost oXXXXX would be pro rata to the increased output.

Yours very truly,

Charles Wirt

L+ Co.

EDISON ELECTRIC LIGHT CO.
44 WALL STREET.

New York Oct. 2nd, '89.

A. E. Kennelly, Esq.,
Edison's Laboratory,
Orange, N. J.

Dear Sir:--

In answer to yours of Sept. 30th, (which you will pardon me for saying is characteristic of the spirit in which you have entered into all our work), I am sure Mr. Martin cannot fail to appreciate your proposition and make the best possible use of the material you will furnish.

In order to expedite matters I have this morning sent him the curves, all of which I assume are of importance either to him, or to me in the publication of the Minutes. In doing this I have stipulated that he loan me the cuts which he uses in his paper, so that the Association will be at no expense in reproducing this portion of the valuable material.

I am obliged to be away for a day or two, but have said to Mr. Martin that inasmuch as you have signified your intention of meeting him at our convenience I should like to arrange for some time immediately on my return. Of this I will advise you later.

Yours very truly,

M. Jacks.

H6.

EDISON ELECTRIC LIGHT CO.
J. H. McCLEMENT,
COMPTROLLER.

16 & 18 BROAD STREET,

New York, Oct. 21, 1889.

Thomas A. Edison, Esq.,

Orange, N. J.

Ans. Oct 23/89

Dear Sir:--

By the enclosed correspondence you will see that we are in search of information as to the alleged expiration of the Spanish Feeder Patent. In referring to the files of the Light Co. I cannot find the original of the letter of Jan 23rd, written by Mr. Dyer to Dr. Crowell, nor can I find any of the enclosures. It has been suggested that these papers were possibly forwarded to you, and as it now becomes of importance that the action of the Continentale Company in the matter shall be investigated, will you kindly refer to your files, and, if possible, send us some information on this point. If nothing is found please return as promptly as consistent the papers here enclosed.

Yours very truly,

W. J. Jenks

For S. B. Eaton
General Counsel.

3 enclosures.

[ENCLOSURE]

PATENT LITIGATION COMMITTEE.

MR. EATON'S MEM. OF BUSINESS FOR MEETING, OCTOBER 14TH, 1889.

First: What answer shall be made to the letter of SHIPPEY BROTHERS, London, September 13th, 1889, asking if we wish to purchase the U. S. WOODWARD Patent, dated August 29th, 1876. No. 181,613. Mr. JOHNSON has examined this matter, and will report.

Second: Mr. DYER'S answer to Mr. POPE'S book on "Evolution of the Electric Incandescent Lamp". I will report what progress has been made in this matter and what Mr. EDISON thinks about printing Mr. DYER'S reply.

Third: Re Opinion of JUSTICE BRADLEY in the Fibrous-Carbon Case. Does the Committee approve my action in printing in pamphlet form, this opinion. Shall a large number of copies be struck off for general distribution; and if so, to what extent and at whose expense? Shall we have an article on the decision prepared for and printed in the Tribune, at an expense of about $500? Shall we insist upon the decree being entered at Pittsburgh at an early date, or shall we leave that to the other side to do whenever they please?

Fourth: Touching the matter of securing a further decision of the Supreme Court of the United States on the question of the effect of the expiration of

[ENCLOSURE]

a foreign patent, I am prepared to report progress pursuant to the adopted resolution, contained in the Fifth Sec. of my Mem. of the meeting of this Committee held on September 26th, 1889.

The POHL Case recently decided against us by JUDGE WALLACE can possibly be advanced on the calendar of the United States Supreme Court, so as to be argued and decided this Winter. The only expense will be that of paying one or two lawyers to argue the law points on our behalf and to prepare the brief, Mr. SEWARD and Mr. LOWREY argued the case before JUDGE WALLACE. Mr. THURSTON is also familiar with the case. Whom shall we employ to argue the case on appeal?

F i f t h: Proposed arrangement with our opponents touching the Hydro-Carbon Case at Trenton. This is the matter referred to in the Seventh Sec. of my Mem. for the last meeting. Mr. EDISON and Mr. UPTON both said positively that the Hydro-Carbon process in suit is not used at the lamp factory, and that so far as our manufacture of lamps is concerned, they have nothing to fear from an adjudication sustaining this patent. The matter, therefore, becomes a question of business policy. Shall we consent to short dates in this case in exchange for a like consent to be given us? I am prepared to make a statement before this question is decided. Probably I shall have nothing to say about the expiration of the Spanish Patent as affecting our progress in this suit.

[ENCLOSURE]

S i x t h: Filament Case. Since the last meeting of the Committee, the Counsel and Experts in this case have spent a day in conference, and will meet once more for conference prior to our putting PROFESSOR BARKER on the stand on the 19th inst. A very important question touching the scope of expert testimony to be entered by us, remains to be settled, and I would be glad to explain it to the Committee, for their consideration. It is important.

S e v e n t h: Referring to the Ninth Sec. of my Mem. for the last meeting, Mr. JENKS and Mr. STIERINGER have examined the THOMSON-HOUSTON on Central Station plant at New Haven and Paterson, Mr. JENKS has made a full report in writing. The New Haven plant infringes sixteen of our patents, and the Paterson plant infringes twenty-seven of our patents. Shall we commence actions on these patents against that Company, or shall we preferably sue the WESTINGHOUSE Companies? Their plants infringe fewer of our patents but enough are infringed to afford the basis for at least six or seven suits if desired. Mr. JENKS is now making an examination of a WESTINGHOUSE plant, in connection with this question.

E i g h t h: Shall we retain any further expert? I refer particularly to Mr. E. S. RENWICK.

N i n t h: Shall I employ further attorneys, and what ones. We have ten patents, all but two, well advanced in litigation, which we can press. They are the

[ENCLOSURE]

Feeder, Lamp in Two Parts, the Pendant Lamp with Shade above it, the Johnson Double Pole Switch, the Johnson Double Pole Safety Catch (in these two patents we have done nothing except commence suit), the Three Wire House Service, the Andrew's Break Down Switch, the High Resistance Filament, the Three Wire System, and the Plugging In and Out of Feeders. In most of these cases we have made out a prima facie case. Shall we force the other side to go ahead? Most of these cases are against the WESTINGHOUSE Companies.

The WESTINGHOUSE lawyers are already forcing cases against us on five patents, to wit: The SAWYER and MAN System, the Hydro-Carbon, the Two Farmer Regulators, and the driving out of occluded gases. They have eight patent lawyers under retainers, as well as more experts than we. How many more lawyers shall we employ and on what cases?

T e n t h: Should the WESTINGHOUSE COMPANY appeal from JUDGE BRADLEY'S decision to the Supreme Court, it will be important to have all the documents, stenographic reports, &c., used at Pittsburgh, for use on the appeal. I, therefore, suggest the adoption of the following resolution.

R e s o l v e d: That the attorneys and counsel in the Fibrous-Carbon Case be and are hereby requested to turn over to the General Counsel all documents, stenographic reports or notes, and other data for permanent

[ENCLOSURE]

preservation by the Company. The General Counsel is hereby instructed to promptly act on this resolution.

Respectfully Submitted,

S. B. EATON,

General Counsel.

120 Broadway,

October 11, 1889.

[ENCLOSURE]

A M e e t i n g of the Patent Litigation Committee of the EDISON ELECTRIC LIGHT COMPANY was held, pursuant to call, at the Offices of MESSRS. DREXEL, MORGAN & CO., 23 Wall Street, on Monday, Oct. 14, 1889, at 4 p.m.

PRESENT: MESSRS. WRIGHT, DAVIS, SMITHERS, HERRICK and EATON.

O n M o t i o n, the reading of the minutes was dispensed with.

The following memo. of business was presented by the General Counsel. (Copy memo.)

The matter referred to in the first section of MAJOR EATON'S memorandum was passed owing to the absence of Mr. JOHNSON.

O n M o t i o n made and duly seconded, the question of publication of Mr. DYER'S answer to Mr. POPE'S book on "Evolution of the Electric Incandescent Lamp" was referred to General Counsel.

O n M o t i o n made and duly seconded, 5,000 copies of JUDGE BRADLEY'S decision were ordered printed for general distribution; and it was resolved that no further publication on the subject be made in the Tribune.

The question of advancing the POHL case on the calendar was referred to General Counsel with power; also the question of the employment of necessary counsel, in

[ENCLOSURE]

addition to Mr. SEWARD).

On Motion made and duly seconded, the proposed arrangement for advancing rapidly the Hydro-Carbon case at Trenton was declined, unless a satisfactory case can be selected by our counsel to be equally pressed.

On Motion made and duly seconded, the power to press a limited number of new patent suits was referred to General Counsel with power.

The question of employing additional counsel for these cases was also referred to Mr. HERRICK and the General Counsel, with power, the idea being that in minor cases comparatively inexpensive lawyers would be required.

The question of employing Mr. RENWICK was laid over with the recommendation that the General Counsel use Mr. KENNELLY.

On Motion made and duly seconded, it was

Resolved, that the Attorneys and Counsel in the fibrous carbon case be and hereby are requested to turn over to the General Counsel all documents, stenographic reports or notes and other data for permanent preservation by the Company. The General Counsel is hereby instructed to promptly act on this resolution.

The meeting was then adjourned.

ATTEST:

J. H. HERRICK,

Act. Secy.

EEL C

EDISON ELECTRIC LIGHT CO.
44 WALL STREET.

New York, Nov. 20, 1889

Dear Sir:-

In accordance with the By-Laws of this Company, I beg leave to notify you that at the first meeting of the Board, held November 12th, a resolution was adopted giving notice of proposed amendment of Sec. 10, Art. 4, of the By-Laws. The section referred to reads as follows:

"Each Trustee, not under salary, shall be entitled to five dollars for punctual attendance at any Board meeting or any Committee thereof."

The next quarterly meeting of the Board will be held at the office of the Company on the 3rd. Tuesday in January next, at which meeting the proposed amendment will be considered and acted upon.

Yours very truly,

T. A. Edison, Esq.

F. S. Hastings,
Secretary.
mcs.

EGEC

EDISON GENERAL ELECTRIC CO.
44 WALL STREET.

New York, Dec. 16th, *1889*

T. A. Edison, Esq.,
Orange,
N. J.

Ans. Dec. 20/89

Dear Sir:--

A number of Van Choate lamps were sent to the Lamp factory some days ago. Lamps of 150 c.p. show an expenditure of 2 watts per candle.

Do you consider the matter of sufficient interest to know something more about these by putting them on your circuits for a life test ? If so, they can be sent over from Newark at any time.

Yours very truly,

W. J. Jacks.

Send 2 of them to Lab. us for test

1889. Electric Light - Edison Electric Light Company - Illuminating Companies (D-89-36)

This folder contains correspondence and other documents relating to the organization and management of local Edison illuminating companies. Included are documents concerning the annual convention of the Association of Edison Illuminating Companies. Among the correspondents are Jonathan H. Vail, secretary of the Association of Edison Illuminating Companies, and Edwin R. Weeks, general manager of the Edison Electric Light & Power Co. of Kansas City.

Approximately 40 percent of the documents have been filmed. The following categories of documents have not been filmed: routine meeting announcements; routine orders.

THE ASSOCIATION OF

EDISON ILLUMINATING COMPANIES.

OFFICERS, 1888-9.

PRESIDENT, JOHN I. BEGGS.
VICE-PRESIDENT, C. P. GILBERT.
SECRETARY, J. H. VAIL.
TREASURER, WILSON S. HOWELL.

SECRETARY'S OFFICE,
ROOM 58, No. 16 BROAD STREET,

EXECUTIVE COMMITTEE, 1888-9.

A. L. SMITH, APPLETON, WIS.
F. R. UPTON, HAMMOND, N. J.
C. L. EDGAR, BOSTON, MASS.
THOS. P. MERRITT, READING, PA.
R. M. JONES, LARAMIE CITY, WYO.

New York, Jany 12th, 1889.

Thomas A. Edison, Esq.

Orange, N. J.

Answ. 12/1/89.

Dear Sir : -

I have been requested to ascertain how many representatives of Edison Illuminating Companies in this vicinity will attend the next semi-annual convention of the Edison Association at Kansas City, Mo.

If possible, it is desired to get together a party of sufficient size to occupy a special car on one of the Penn. R. R. Limited trains, similar to the trip to Chicago last year.

Will you kindly inform me at an early day whether we can expect the pleasure of having you with us on the trip?

Can't get time to get there

Yours truly,

J. H. Vail

Secretary.

per TJB

H. G. Tombler, President.

Howard Rinck, General Manager.

ans. 19/1/89.

The Edison

ELECTRIC * ILLUMINATING * COMPANY.

EASTON, PA. Jan 15 1889

Mr. Edison

Dear Sir

Enclosed find Receipt for the Cadwell Bill which please receipt and return.

We expect to run Station Steam Dynamo Wednesday if not sooner could you not manage to be here then. I was very glad to hear of your Company, and note all the pressure Brought to bear by the Westinghouse Company I think the Edison System, Simplex & Dynamo only appreciated to have your patronage. Yours

Howard Rinck

S. B.

EXECUTIVE OFFICE
THE EDISON ELECTRIC ILLUMINATING CO.
OF NEW YORK,
16 & 18 BROAD STREET,

SPENCER TRASK, President.
JNO. I. BEGGS, Vice Prest.
J. B. SKEHAN, Sec'y and Treasurer.

Jan 31/89

NEW YORK, January 15th 1889

Mr Edison
Orange N.J.

Dear Sir

I beg to advise you that at a meeting of the Stockholders of this Co held this day, you were elected a Director, to serve for the ensuing year,

Will you be so kind as to advise me of your acceptance of same and if you accept please Board at once 10 shares of stock, transferred to your name so that you may qualify in order to comply with the Law,

Yours truly

J. B. Skehan
Secretary

Edison Elect. Illm. Co.

THOMAS A. EDISON, President.
CHAS. BATCHELOR, Vice Pres.

SAMUEL INSULL, Treas. & Genl. Manager.

J. HUTCHINSON, Secretary.
JOHN KRUESI Asst. Genl. Manger

THE EDISON MACHINE WORKS.

CABLE ADDRESS: "EDISON, NEW YORK"

BRANCH OFFICE: 65 CEDAR ST. N.Y. CITY.

Schenectady, N.Y. January 18th. 1889

My dear Tate:-

I have your favor of the 17th. inst.

The only New York Illuminating Stock that Mr. Edison has is the Script now in the hands of Messrs. Drexel, Morgan & Company. Write to Mr. Skehan and ask him if Mr. Edison can qualify with that script. You will get a reply by the time I am back in New York, when I will see you about the matter.

Yours very truly,

Samuel Insull

A.O.Tate, Esq.
Edison's Laboratory.
Orange. N.J.

Ch. Ltr. Chicago.

ANTHONY F. SEEBERGER, President.
J. W. DOANE, Vice-President.
F. S. GORTON, Sec'y and Treas.

THE CHICAGO EDISON CO.

139-141 ADAMS STREET.

DIRECTORS.

A. F. SEEBERGER. ROBT T. LINCOLN.
JOHN B. DRAKE. J. W. DOANE.
P. L. YOE. F. S. GORTON.
EDSON KEITH. A. A. SPRAGUE.
R. C. CLOWRY. E. M. PHELPS.
BYRON L. SMITH.

CHICAGO, Jan. 19, 1889.

Thomas A. Edison Esq.,
Orange, N. J.

Dear Sir:

We are talking of building a station for residence lighting principally. The area to be coveredis 1-2 mile wide by a mile and a half long. The station would be located a mile and a half from our present station. Could we in any way feed the new station during light run, from our present station? The new station would have capacity of from 15000 to 20000 lights. I do not think thelargest load would be over 10,000 lights, and the light load might be 1000 at the utmost. This new station would cover the residence district in which many of our stockholders life, and they are very anxious for the light. If operated constantly we do not think it would pay, unless we could feed it from our present station, with one or two men to attend to the regulation. We would be obliged to you fo any suggestions you may give us on the subject.

We could locate the station on one side of the area, adjoining the railroad and the lake, in that way making a saving in fuel and water.

It occurs to us that if we could feed from the old station to the new station, it might possibly be cheaper to feed from the new station to the old one.

We enclose rates we get for power, which you will see are higher than some companies charge; also a table showing the rates for power compared with the rates for light. This is based on motors for continuous work--not intermittent.

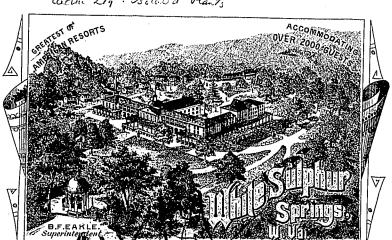
Mr. E. T. Watkins, former President of the old gas company, who is a stockholder in our company, has been prevailed upon by ourpeople to take the Presidency of this Company. He went to New York last night and while he is East will probably call on you. He has with him a statement of our last year's business, which I will ask him to show to you. In it I show the largest and the smallest number of lights operated during December, which is the largest lighting month. I wish you would please give Mr. Watkins all the information he may desire, because on the result of what he learns there will determine the policy of this Company for the future. I trust that

Regarding the matter of new station, if you wish, I will sendyou maps of the city showing our present station and the contemplated station.

Very truly yours,
The Chicago Edison Co.,

F. S. Gorton
Sec'y & Treas.

Boston Lith. Co. United States



January 22nd 1884

Thos. A. Edison Esq
Laboratory Orange N.J.

Dear Sir -

I have just made a contract with Mr. Mallory, for the establishment of an Electric plant here - In coming together on the price, there was one hundred dollars between us - I suggested to him that we were anxious to have you visit us here during the ensuing season, and if you could be induced to come, we would credit your bill with this sum.

Be assured my dear sir, that this paltry sum does not measure our desire to have you here.

Thousands of people from all parts of the United States, come here during our summer season. It would be a great pleasure to them to see the great discoverer of our age - The man who has not only made his country, but the whole world his debtor, by the force of his native genious, supplemented by unbending and untiring pluck and labor -

Do not imagine that the homage which all would feel was due you, would be paid in any ostentatious, or offensive form, even to a man of your well known modesty - Most, if not all this homage would be felt, rather than expressed - I imagine you -

would enjoy the rest, and quiet of this place. Mr. Slattery will describe it. Box can have a nice Cottage near the main hotel, or if you prefer, can take one, on ¼ or ½ of a mile from it. All our guests take their Meals at the Hotels.

We have had the erection of this Electric plant in contemplation, for a year, & have received propositions from other Electric Companies; but I preferred to have your name. The name of the original inventor connected with the plant here.

The present contract is limited by the capacity of our steam plant; but in a year we hope to enlarge our boiler capacity, so as to give your Electric light to every room on the place.

Yours truly

H. A. Stuart

For the White Sulph. Springs Co

THE ASSOCIATION OF

EDISON ILLUMINATING COMPANIES

Secretary's Office, Room 58, No. 16 Broad St.

OFFICERS 1888-89.

PRESIDENT, - - - JOHN I. BEGG.
SECRETARY, - - - J. H. VAIL.
TREASURER, - - - WILSON S. HOWELL.

New York, January 25th, 1889.

~~Edison Electric Illuminating Co.~~
T. A. Edison Esq
OF Orange N. J

Gentlemen:—

The next semi-annual convention of the Association of Edison Electric Illuminating Companies will be held at Kansas City, Mo., Tuesday, February 12th, 1889. (The By-Laws having been changed at the last meeting, providing that the Convention shall convene on Tuesday instead of Wednesday.)

The headquarters of the Convention will be at the new COATES HOUSE, where the Executive Committee have made satisfactory arrangements for the accommodation of the Association.

This Convention gives promise of being of more than usual interest and profit to all Edison Companies and it is therefore important that all should be represented.

The special Committee on Fire Insurance have given very thorough attention to their duties, and will present a full and valuable report, with recommendations for the consideration of the Association.

The increased prosperity of Edison Illuminating Companies, the growth of the meter system and other improvements and developments, will bring out valuable and interesting discussions.

Among the papers to be presented are the following:

The evening session of the opening day will be devoted to a Stereopticon talk by Mr. W. J. Jenks, entitled "Nooks and Corners of Central Stations."

Other interesting and valuable papers are promised

By Prof. Wm. D. Marks, on the Steam Engine.

By Messrs. Jackson, Wirt and Field, on new uses for the Electric Current from Central Stations.

By Mr. J. H. Vail, on Power supplied for railway purposes from Edison Central Stations.

The Executive Committee hereby extends an earnest and cordial invitation to all old and new Companies not yet members of the Association, to send one or more representatives to this meeting, with authority to enroll their Company as a member of the Association.

To those Companies already members a special request is made that they will each be represented by AT LEAST ONE member, and as many more as possible, thus giving encouragement by your presence to the entire Association, and at the same time imparting and acquiring valuable suggestions and information.

The Secretary will esteem it a particular favor if you will kindly advise him on the enclosed postal card how many representatives your Company will send, thus enabling him to notify the hotel in advance, so as to insure satisfactory accommodations, being reserved for all who may attend.

Yours truly,

J. H. VAIL.
Secretary.

First American
Spencer Trask & Co.,
Bankers & Brokers,
Nos. 16 & 18 Broad Street,
New York.

PRIVATE WIRES TO
PROVIDENCE, SARATOGA, ALBANY, PHILADELPHIA, WORCESTER, BOSTON.

Albany 23/2/89.

Feby 19th 1889

A. C. Yates Esq
Secretary Thos A. Edison
Edison N.J.
Dear Sir

I have received
for account Edison Electric Illuminating Co of New York from Drexel Morgan & Co and for which I have paid you @ 94½ and sell your 100 shares stock of same @ 96½ and transfer the same to Thos A. Edison.
This is a satisfactory way to remit I enclose as per enclosed statement and will return your certificate

Yours truly

T. A. E.'s

EUGENE CROWELL, PRESIDENT.
CHAS. E. CHINNOCK, VICE-PRESIDENT.
ROYAL D. PEABODY, SEC. & TREAS.
C. J. FIELD, General Manager.

EDISON ELECTRIC ILLUMINATING CO.
OF BROOKLYN.
26 & 28 COURT STREET.

BROOKLYN, Feb. 25th. 1889.

A. O. Tate Esq.

Private Sec'y Mr. Thos. A. Edison

Orange, N. J.

My dear Mr. Tate-

Mr. Chinnock desires me to go up and see Mr. Edison regarding the determination for the Brooklyn district, as we have laid it out. This is the upper ground system.

I have tried to make some improvements for general arrangement on plan laid out in other stations, and before submitting it to the board of Directors, would like to have Mr. Edison's opinion of it.

Will you kindly wire or telephone me to-morrow morning, when it would be convenient for him to give me a few moments, and oblige

Yours very truly

C. J. Field.

General-Manager.

Send word to above address.

H. G's.

E. T. WATKINS, President.
J. W. DOANE, Vice-President.
F. S. GORTON, Secretary-Treas.

THE CHICAGO EDISON CO.
138-141 ADAMS STREET,

DIRECTORS:
A. F. SEEBERGER. ROB'T T. LINCOLN.
JOHN R. DRAKE. J. W. DOANE.
E. T. WATKINS. F. S. GORTON.
C. L. BREWSTER. A. A. SPRAGUE.
R. C. CLOWRY. C. M. PHELPS.
BYRON L. SMITH.

CHICAGO, March, 15th, 1889. 188

Thomas A. Edison,

Orange, N. Y.,

Dear Sir:-

We recently received a letter from the Machine Works in which they quoted a letter from you in regard to using chloroform in our junction boxes to prevent explosions.

I thought before doing anything I would like to have your idea of the proper way of using it. We have heard nothing about their using it in the up town districts in New York.

Very Truly Yours,

The Chicago Edison Co.

F. Gray Supt.

H Co

THE EDISON ELECTRIC ILLUMINATING CO.
OF NEW YORK,
16 & 18 BROAD STREET.

SPENCER TRASK, President.
JOHN I. BEGGS, Vice-President.
J. B. SKEHAN, Sec'y & Treas.

NEW YORK, March 11th 1889

Thos A Edison Esq
Orange N J

Dear Sir

The enclosed letter of Mr Insull should have accompanied the copy of his letter to Mr Peck sent you yesterday, by oversight it was omitted.

Yours truly
S B Shehan

[ENCLOSURE]

THE EDISON ELECTRIC ILLUMINATING CO.
OF NEW YORK,
16 & 18 BROAD STREET.

NEW YORK, March 15 1887

Thos. A. Edison Esq

Dear Sir

Mr Beggs informs me he has arranged to meet you tomorrow to discuss certain questions relative to our Co. in New York

I have written him a letter, a copy of which I enclose, covering certain points on which the Board desire information

I send you the questions so you may have an opportunity of giving them thought in advance of the Conference

We want to determine on our action at once, but you can readily appreciate that not only for our own sake but for the general interests of the entire Edison System, we want to be pretty certain before we positively decide upon a course of action

I trust you will be able to determine favorably & soon upon them

Yours truly

Jas. W. Bruce

President

[ENCLOSURE]

H Co. - E E I C g N Y.

Copy

New York, March 15th 1889.

Mr. John I. Beggs,

Gen'l Man'g & V. President,

Dear Sir:-

In the proposed conference tomorrow with Mr. Edison and Mr. Kruesi regarding a contemplated new station in the 1st. district and the practicability of successfully and economically connecting the present two wire system, with the new standard three wire system. I desire that the following statement of what we want to accomplish should be presented and that, as far as possible explicit answers should be obtained for presentation to the Board with this letter next Tuesday, 19th inst.

1st. We want to extend the present limits of the First District so as to include from the Battery as much as possible of the City below Canal Street.

Can we successfully cover this area from one Station? If not, how much of it?

2nd. What would probably be the best location for such a station, no regard being paid to our present underground system?

How would a location near Astor House suit?

3rd. In case we build such a station, in order that it may ultimately be properly situated for the entire new enlarged District, its location at first would necessarily be outside of the present underground system.

The plan would then be to extend with the 3 wire tubes from the new station to points divergent from, but which afterwards would balance our present system, [see note] and then from time to time connect the new system with our present two wire system, till, finely we could dispense altogether with our Pearl St. Station and then the entire District be supplied from the one New Station. Is such a plan practicable?

[ENCLOSURE]

4th. Can we thus economically connect the three wire system with a two wire System?

5th. What main features would be involved in the change?

6th. If the Connection of the systems can be arranged for, will it be necessary to rewire buildings now wired, so that they can receive the current from the 3 wire system?

This is a very important consideration, since we cannot ask or expect our present customers to rewire for our benefit, nor be put to inconvenience even should we want to rewire at our expense.

6th. Can we economically utilize cables for portions of the length of feeders?

7th. Can we arrange, in such a new combined System to dispense with feeder equalizers?

By ~~Sending~~ answers to the above seven questions, our Board will then be in a better position to determine their future action. The necessity of haste in such a determination is apparent.

Yours truly,

Signed Spencer Trask

President.

Note to 3rd Point.

Suppose a new station was built outside of present district, say in the neighborhood of the Astor House. We would then supply all the customers north and west of that point until we had a fair paying load. In mean time, the Pearl St. Station would be supplying, as now, our present customers and none of the power of the new station would at first be wasted in supplying what can be supplied from old station.

H. Co's 1611

Ans. May 7/89.

C. T. WATKINS, President.
J. W. DOANE, Vice-President.
F. S. GORTON, Secretary.

THE CHICAGO EDISON CO.

138-141 ADAMS STREET,

DIRECTORS:
A. F. BECKERDER. ROBT T. LINCOLN.
JOHN A. ERASE. J. W. DOANE.
C. T. WATKINS. F. S. GORTON.
C. L. BREWSTER. A. A. SPRAGUE.
A. G. SLOVEY. C. M. PUELPS.
BYRON L. SMITH.

Gorton" Just want a little chance to get there in some of

CHICAGO, April 23rd, 1889. 188

Mr. E. Edison,
My Dear Edison .-

In the C. B. & Q. Test on lamps, I learn that the "Perkins lamp" was first , our lamp was third, that at the end of 600 hours our lamp fell to 9 candles. This matter is going to be made public. When I was at the annual meeting, in Bergmann& Co's office, Hutchinson, showed me a letter from their agent, giving different cases where lamps were unsatisfactory. I told them that it was his duty to let you know these things, and the trouble with many of your employees was, that they would not tell you anything that was unpleasant, even though it were true, so that you could have remedied any faults in lamps or apparatus.

The "T. & H. Co." make a very good Dynamo, and will sell them at less by 10 per cent than we can buy from the Machine Works. The business is increasing . We have always taken the lead, and should hold it, and sell more plants every year, than the previous year, and by increase business should be able to make the apparatus cheaper. I wrote Insull a long letter yesterday, which he will probably show to you. My territory consists of this county alone, and I want to sell every incandescent plant & lamp that is used here. We made our cut on lamps to $.60 just the right time. The Perkins Co., have on the way here, a large stock of lamps and they propose going in and capture the lamp business of the West.

There should be a Head Quarters here of the Edison Business and a Manager who had his heart and soul in the Edison interest to pursue an aggressive policy of capturing all the business.

My idea, would be, to make districts of the country, and district managers all under salary, whose duty it was to cover the country with plants. The trouble has been and is, with the agencies as some of them have been run. The agent was first, and if he could not make anything, he did not care. By the ~~[illegible]~~ and aggressive policy system, we could double our out put of the shops and the Edison Co., owing the shops, would make more money than they ever have. Holding up the price of the lamps, without an absolute monopoly has been suicidal, and if it had never been done, there would have been fewer lamps-makers to-day in the field.

Very respectfully,

F. S. Gorton

I to Co

INCORPORATED MAY 5TH 1882

The Edison
ELECTRIC ILLUMINATING
COMPANY.

P. B. SHAW. GENL. MANAGER.

Williamsport Pa. July 6th, 1889

Thos A. Edison, Esq.,

Orange N.J.,

My dear Edison:-

I hold a receipt from you for $150. of the capital stock of the Edison Electric Ill'g Co of Mount Carmel: a delivery of the certificates at your convenience will oblige.

Respectfully yours.

P. B. Shaw

Lamps

William F. Pyle, Pres. — Arthur Pyle, Treas. — William Stanger, Vice Pres.

Edison Electric Illuminating Company.

Wm. M. Brock, Sup't & Gen'l Manager

Philadelphia, Pa. July 23rd 1889

Copy sent to Edison Lamp Co. Aug. July 24/89

Thos. A. Edison Esq.

Dear Sir

I Expres to day to Your address 4 Lamps which have been returned to us by the Phoenix Mills people who are testing 100 of our lamps with a view to displacing 1100 Sawyer-Mann lamps now installed in their Mill. You will observe that the carbon breaks at the point of union with the platinum, Out of 100 lamps sent to this Mill about 15 have given out in this way, I sent a few of them to the Lamp factory some days ago, As this is the starting point of a Prospective raid on about 1200 Sawyer-Mann lamps it is very important that we make a good showing at this Mill, Hence I trust You will kindly look into this matter & advise.

Yours Very Truly

Wm. M. Brock
Mgr

Mr Marshall
should personally
investigate this —
Its due undoubtedly
to inferior clamp paste
or Carlessness in putting
on = This defect at Clamp
which is a known thing
is a disgrace to the Lamp
Co - There is some Excuse in a
filament which we have to
guess about but not so with
Clamping Etc

H. G's

THE ASSOCIATION OF

EDISON ILLUMINATING COMPANIES

Secretary's Office, No. 16 Broad Street.

OFFICERS 1880-81.

PRESIDENT, - - - JOHN I. BEGGS.
VICE-PRESIDENT, - - - C. P. GILBERT.
SECRETARY, - - - J. H. VAIL.
TREASURER, - - - WARD B. HOWELL.

New York, July 30th. 1880.

T. A. Edison, Esq.,
Orange,
N. J.

Gentlemen:—

The next Meeting of the Association of Edison Illuminating Companies, will be held at Niagara Falls, N. Y. commencing Tuesday, August 18th 1880.

It is earnestly desired that your Company should be well represented at this Meeting, thereby adding to the general interest of the occasion, and more generally disseminating the valuable information and suggestions brought out in the discussion of the several important matters to be considered, and the special papers presented, of which there will be quite a number, prepared by some of the most competent men in the business; which information and suggestions, it is believed by those who regularly attended the Meetings are worth to any local Company many times the cost of sending representatives to the Meetings of the Association.

This being the season of the year when many of those connected with the local Companies seek relaxation and rest, it is suggested that no more interesting and delightful trip can be taken, than to Niagara Falls, thus enabling business to be combined with pleasure, and afford those having common interests at stake to meet, and become acquainted and exchange ideas and experiences, whereby the whole business will be greatly and permanently benefited.

At the last Meeting of the Association, the By Laws were ammended, so that the Meetings hereafter, will be (commencing with the Meeting in August next,) held annually, instead of semi-annually, consequently there will not be another session of the Association for twelve months; which renders it all the more desirable and important, that this Meeting should be well attended, as there are many matters of general interest to the local Companies to be considered, and also Officers of the Association for the ensuing year, to be elected.

Arrangements for Hotel accommodations have been concluded with the INTERNATIONAL HOTEL. Terms $3.50 to $4.00 per day, according to rooms which may be secured in advance by telegram.

You are requested not only to have your own Company well represented, but also to use your influence in securing the attendance of others.

Yours very respectfully,

JOHN I. BEGGS,
President.

J. H. VAIL, SECRETARY.

El. Lt. Co's

THE ASSOCIATION OF
EDISON ILLUMINATING COMPANIES.

OFFICERS, 1889-90.
PRESIDENT, JOHN I. BRIGGS.
VICE-PRESIDENT, C. P. GILBERT.
SECRETARY, W. J. JENKS.
TREASURER, WILSON S. HOWELL.

SECRETARY'S OFFICE,
ROOM 71, No. 44 WALL STREET.

EXECUTIVE COMMITTEE, 1889-90.
A. L. SMITH, APPLETON, WIS.
C. L. EDGAR, BOSTON, MASS.
THOS. P. MERRITT, READING, PA.
H. R. WERKS, KANSAS CITY, MO.
C. J. FIELD, Brooklyn, N. Y.

New York, Sept. 4th, 1889.

Charles Batchelor, Esq.,
33 West 25th Street,
New York City.

Dear Sir:

I enclose copy of the stenographer's notes of the discussion as to the Transformer. You will notice that the question of control of that type of apparatus at the sub-station from which the secondary circuits radiate was quite fully gone into, and that it was stated on Mr. Edison's authority that no such control had been provided for, but that a change of pressure in the secondary system, made necessary by the variation of load, must be effected by the government of the field magnets of the Municipal dynamo at the power station. Mr. Edgar made it very clear that in any comprehensive system it would be desirable to place several motors, and perhaps more than one sub-station, on one feeder.

It will interest you in this connection to read Mr. Wirt's paper on the relative efficiency of the three-wire, double three-wire (220 volts on each side) and the motor dynamo, with curves. All of these I enclose trusting that you will return the paper and diagrams as soon as convenient as they are to come up very soon

for discussion here in the office.

It will be a matter of great interest to us in connection with this discussion if we can have your judgment as to the correctness of Mr. Wirt's promises.

Yours very truly,

W. J. Burns.

Secretary.

Magnier

EUGENE CROWELL, President.
CHAS. E. CHINNOCK, Vice-President.
ROYAL C. PEABODY, Sec. & Treas.
C. J. FIELD, General Manager.

EDISON ELECTRIC ILLUMINATING CO.
OF BROOKLYN,
26 & 28 COURT STREET.

BROOKLYN, Sept. 9th. 1889.

Mr. Batchelor
Edison Labratory, Orange, N. J.

Mr. Batchelor--

I have been so rushed with work that I have omitted writing you, although I believe somebody was trying to get me on the telephone one day from the Labratory, but could not make out to do so.

I got my Station started by the time I expected, last Monday, and have now a little time to spare and would be glad to meet you either at the Labratory or your house anytime in regard to Mr. Edison's plant.

Yours very truly

C. J. Field Jr.

of Co

MEMORANDUM.

EDISON ELECTRIC ILLUMINATING CO.
OF BROOKLYN,
26 & 28 COURT STREET.

To Mr. Field.

BROOKLYN, Sept. 21st, 1889.

Of the 38 meter plates received this morning from Bergmann & Co., 17 proved defective. In setting up a pair of plates, the cork bound the rods, and the slight pressure thus produced cracked the lug. This called my attention to this defect, and upon trying the rest, found 17 that yielded upon slight pressure. I think two things would help this- putting less Mercury in composition, say 2% instead of 5% as at present, and instead of spreading the foot of the rod, notching it.

R D White.

4 Co

THE ASSOCIATION OF
EDISON ILLUMINATING COMPANIES.

March 13, 1890.

OFFICERS, 1889-90.
PRESIDENT, JOHN I. BEGGS.
VICE-PRESIDENT, C. P. GILBERT.
SECRETARY, W. J. JENKS.
TREASURER, WILSON S. HOWELL.

SECRETARY'S OFFICE,
ROOM 71, No. 44 WALL STREET.

EXECUTIVE COMMITTEE, 1889-90.
A. L. SMITH, Appleton, Wis.
C. L. EDGAR, Quincy, Mass.
CHAS. P. GILBERT, Stamford, Ct.
H. B. WORDEN, Kansas City, Mo.
C. J. FIELD, Brooklyn, N. Y.

New York, Sept. 21st, 1889.

A. E. Kennelly, Esq.,
Edison's Laboratory,
Orange, N. J.

Dear Sir:-

You are hereby respectfully notified of your appointment at the Niagara Falls Convention to a Committee to investigate the proposed practice of grounding the Neutral Wire in Edison Three-wire Systems, in accordance with the following resolution:

R E S O L V E D, That a committee of eight be appointed by the Chair to thoroughly investigate the subject of Grounding the Neutral Wire in Three-wire Systems, and that the committee be instructed to report to the Executive Committee of the Association at the earliest possible moment.

The other members of the committee are Wilson S. Howell, Montgomery Waddell, C. J. Field, John Krewsi, H. Ward Leonard, Philip Seubel and C. L. Edgar.

Yours very truly,

W. J. Jenks
Secretary.

Rogers

EUGENE GROWELL, PRESIDENT.
CHAS. E. CHINNOCK, VICE-PRESIDENT.
ROYAL C. PEABODY, SEC. & TREAS.
C. J. FIELD, General Manager.

EDISON ELECTRIC ILLUMINATING CO.
OF BROOKLYN.
26 & 28 COURT STREET.

BROOKLYN, Oct. 3rd. 1889.

Mr. Chas. Batchelor.
Edison Labratory, Orange, N. J.

Dear Sir;-

We have been trying to get from Bergmann & Co. the material and fittings for our new meters but they have been delaying us on everything very much; more than anything else, we are hampered on getting plates.

These, I understand, are made at the Labratory for Bergmann & Co. It is very hard for us to have to connect up customers without meters, but this is the state we have been in for the last month. We have no meters for more than one-third of our customers. We are now getting the meters but have only a very few plates.

Can I ask you if you cannot kindly do something to hurry these plates through?

Yours very truly,

C. J. Field

General Manager.

Have spoken with Gladstone on telephone concerning this. He has already supplied 300 zincs at least to Bergmann for Brooklyn.

A. E K.

Meter

B. H. THROOP, PRES'T.
GEO. A. JESSUP, TREAS.

FRED C. HAND, SEC'Y.
J. E. PARRISH, SUPT.

OFFICE OF

The Scranton Illuminating, Heat and Power Company.

Rooms 9 and 10, Scranton City Bank Building,
234 LACKAWANNA AVENUE.

Scranton, Pa., Oct 26 1887

Mr A. E. Kennelly
Chf Electr Edisons Laboratory
Orange
N J

Dear Sir

I wrote to ask you if you will kindly give me some information concerning the conveyance of the Edison Meter, I have read your paper on "recent improvements in the Incandescent of Electric Solution &c" in the minutes of the Observatory, held in Kansas City, & find that the instructions given our meter man does not agree with your ideas on the subject

Probably I had better give you a short history of our Station & the adoption of the Meters. This station started the third series system last January. At the Directors meeting that month Mr Mc Clement made the resolution to adopt the Meter system & it was

B. H. THROOP, Pres't.
GEO. A. JESSUP, Treas.

FRED C. HAND, Sec't.
J. E. PARRISH, Supt.

OFFICE OF

The Scranton Illuminating, Heat and Power Company.

Rooms 9 and 10, Scranton City Bank Building,
234 LACKAWANNA AVENUE.

Scranton, Pa., ... 188....

adopted).

The engineering department sent a man here to visit our meter man & get the fifth meter in operation.

We have put in the balance of the meters & are now operating 230 meters on commercial customers.

The first meter bills to customers, were naturally high, since they had two years in which to above contract privileges.

Our first carboy of solution came from Mr. Edison's laboratory, or rather, the distilled water came from there, After that was used, my meter man was to use melted ice.

Our plates are filled & they are not yet cold. I will send you by express this A.M. some bottles as we have always prepared & also here as they come back after a month's run, so that you can see for yourself and advise us whether we should make any change

S. H. THROOP, Pres't.
GEO. A. JESSUP, Treas.

FRED G. HAND, Sec'y.
J. E. PARRISH, Supt.

OFFICE OF

The Scranton Illuminating, Heat and Power Company.

Rooms 9 and 10, Scranton City Bank Building,
234 LACKAWANNA AVENUE.

Scranton, Pa., ... 188_

According to the way some of our meters reads, & the report the customers make of the use of the light, sometimes think some thing is wrong, although I always stand by the meter. One customer came to us yesterday & said he will take off device that he only burned 1-16 C.P. lamps, 3 hours each for one month & get his bill of $.34 per 16 C.P. hour (that is the rate we take for that rate) amounted to $5.25. Another customer with six lamps had a bill averaging $1.20 per month for three months & then tried 3 days for one or two months, his 3 days bills were not over 6¢ per month. I took out his meter & put in another one of the same age & inspected bill on the new meter was 6¢ with the same lamps burning & the wire & cords & could not find any thing wrong. As the meter system is new here I expect to have complaints for some time, what I desire to know is the most proper

R. H. THROOP, Pres't.
GEO. A. JESSUP, Treas.

FRED C. HAND, Sec'y.
J. E. PARRISH, Sup't.

OFFICE OF

The Scranton Illuminating, Heat and Power Company.

Rooms 9 and 10, Scranton City Bank Building,
234 Lackawanna Avenue.

Scranton, Pa., _____ 188__

& reliable way to heat the plates & prepare the solution, & ask you to kindly point out any defects & make such suggestions as you think best.

If your Mud melted ice is not pure we will get distilled water from the laboratory, & if you think the plates should be gumbalgamated hot, I am willing to provide for hot plan & power. Hot whatever you suggest will be the safest & surest way, & I will then feel assured that every meter is correct & can guarantee it.

Yours respectfully,

THE SCRANTON ILLUMINATING HEAT & POWER CO.

By _____

H. GRIGGS, PRESIDENT.
D. H. HOOVER, VICE-PRESIDENT.
A. DAVIS, TREASURER.
E. M. WEEKS, GENERAL MANAGER.
W. E. GRIGGS, JR., SECRETARY.
G. M. HART, SUPERINTENDENT.

EDISON ELECTRIC LIGHT AND POW. COMPANY,
NATIONAL BANK OF KANSAS CITY BUILDING.

Dictated.

Kansas City, Nov. 11, 1889.

Mr. Thomas A. Edison,

Orange, N. J.

Ans. Dec. 14/89

My dear Mr. Edison:

Permit me to suggest that a most interesting subject for the discussion by phonograph which you kindly promised for the Kansas City convention in February would be "The Methods of Regulation and Distribution by the Five Wire System". This, in addition to being news, would be the best possible card for your interests in the West, where, in distribution from central stations, distances are greater than in the East, as business is more widely scattered.

During the few weeks preceeding the convention, I intend to publish biographical sketches of some of the leading electrical men of America. With your permission I shall include your name in the list and hope to receive from Mr. Hicks some material as yet unpublished.

Hoping to hear from you at your convenience, I remain with best regards

Yours very truly,

Edwin P. Lovett

W. S. BROWN, PRESIDENT.
F. H. HOOKER, VICE-PRESIDENT.
J. E. ENGEL, TREASURER.
E. N. SMITH, COMMERCIAL MANAGER.
W. S. CROWELL, JR., SECRETARY.
S. W. HART, SUPERINTENDENT.

EDISON ELECTRIC LIGHT AND POWER COMPANY,
NATIONAL BANK OF KANSAS CITY BUILDING

Dictated. Kansas City, Dec.13, 1889.

Mr. W. Preston Hix,

General Agent Edison Electric Co.,

#44 Wall St., New York City.

My dear Mr. Hix:

I herewith return Mr. Tate's letter and enclose a letter to Mr. Edison which, after reading, I trust you will kindly favor me by delivering to him in person.

From the letter to Mr. Edison you will at once understand the importance to the Kansas City Edison Company and to me personally of securing the promised discussion. You know better than any one else in New York City the difficulty of raising money in Kansas City, and I must rely upon you to make the most of the argument regarding the increase to our capital. Our light is growing in popularity and we are obliged to put into plant, in addition to our net earnings, from one thousand to three thousand dollars monthly to supply the demand. You well know my personal aversion to being placed in a position where we are not only to borrow money for extensions, but to do without paying a cash dividend which we are earning. Our plant account now amounts to about $120000., twenty thousand of which is covered by a floating debt which worries me not a little, and from which there seems to be no escape except by means of the proposed increase in capitalization.

You will remember that the Kansas City convention will be the first meeting of the Association under the new constitution which limits the membership to central station men who, as a rule,

have no interest in any parent company but whose money is invested in the manufacture of electricity for light and power purposes. I believe you agree with me in the opinion that nothing can so assist the Edison interests among those already in the central station business as to have the actual results achieved by Edison apparatus in the hands of such men as Marks, Beggs and Edgar made known to those the success of whose investments will depend upon the commercial value of the apparatus which they use.

As an instance of what can be done in the west, would remind you that in Texas alone there are about one hundred growing cities having a population of from three thousand and upwards only about 25% of which are supplied with any kind of central station electric light service. The proposed discussion of the Five Wire System will, as I have before written, greatly facilitate the extension of the Edison business in the west, and I have no doubt that Mr. Edison's phonograph discussion at the Kansas City convention, followed up by a proper canvas, would result in the formation of thirty or forty central station companies in Texas alone.

Mr. F. J. Sprague and Prof. Henry A. Rowland have accepted my invitation to attend the Kansas City convention, and the promised discussion from Mr. Edison only is needed to make the meeting a great success.

I rest my case with you, hoping that you will at the earliest favorable opportunity so present it to Mr. Edison that I may be saved the mortification of having to announce both among my fellow townsmen and throughout the country the failure of that part of the programme.

Please let me hear from you as soon as convenient, and oblige.

Yours very truly, Edwin R. Lewis.

[ENCLOSURE]

W. G. BOWES, PRESIDENT.
F. H. HOOVER, VICE-PRESIDENT
J. A. CHICK, TREASURER.
E. N. HEAD, GENERAL MANAGER.
W. G. TRUMBO, JR., SECRETARY.
E. [illegible], SUPERINTENDENT.

EDISON ELECTRIC LIGHT AND POWER COMPANY,
NATIONAL BANK OF KANSAS CITY BUILDING

Dictated. Kansas City, Dec.13, 1889.

Mr. Thomas A. Edison,

Orange, N. J.

My dear Mr. Edison:

A recent letter from Mr. Hix informs me that you fear that you cannot arrange to give us the discussion by phonograph. I trust this will not be your final decision in the matter,however,as relying upon the promise given me when Mr. Hix and I last visited you at Orange,I have written some thousand personal letters to the central station companies of the United States and have,through the local and western daily papers,mentioned as one of the most important features of the programme your discussion by phonograph. The mention of this discussion has been most favorably received not only by central station men but by prominent citizens and the newspapers,and to drop it from our programme will not only greatly disappoint the people of the west,but will place me in a very embarrassing position.

I feel that nothing further is needed to induce you to make a special effort to help me out,but it may not be out of place for me to add that nothing else except your personal presence in Kansas City would so advance the Edison interests in the west,both the phonograph and the electric light,as a short discussion from you upon the Five Wire System as suggested in my letter of the 11th ult.

We greatly need more capital with which to extend the business of the Edison Company in Kansas City,and it is my plan

[ENCLOSURE]

EDISON ELECTRIC LIGHT AND POWER COMPANY.

and hope to place the necessary increase to our capital stock as one of the immediate results of the interest developed by your discussion. I enclose clipping of data, which I have been at much pains to collect, in regard to Kansas City and the west, and send this letter to our common friend, Mr. Hix, with the request that he present it to you in person.

Hoping to hear from you favorably at your earliest convenience, I remain

Yours very truly,

Edward D. Adams.

[ENCLOSURE]

Kansas City has an aggregated population of 247,000. $20,000,000 are invested in street railroads.

It has a greater mileage of cable street roads than any other city in the world.

The investment in buildings for the past year was $9,500,000.

Kansas City is the 12th city of the U. S. in banking capital.

" 10th in bank clearings.

" 9th in volume of post office business.

" 5th in volume of telegraph business.

" 3rd in transfers of real estate.

" 2nd in live stock and packing house business.

" 2nd in the number of steam railroads.

" 2nd in volume of passenger traffic.

" 1st in per cent. of profit from post office.

" 1st in the number of telephones in proportion to the population.

" 1st in the number of telephone calls per telephone.

" 1st in volume of agricultural implement business.

" 1st in extent and resources of tributary territory.

" has 19 railroads radiating in all directions.

In the tributary regions are over 600 cities, whose populations range from 3,000 upward.

Less than 50 per cent. of these cities are supplied with central station electric light service.

Though most of them have street railroads, there are only 45 electric roads in operation.

The business prosperity for 1890 is assured by the unparalleled agricultural yield of this region during the present year.

The value of the total products in Kansas and Texas alone, for 1889, computed upon the basis of estimates from the commissioners of agriculture, is $432,000,000.

EL.LT. Co.

W. S. GRAHER, PRESIDENT.
T. K. HOOVER, VICE-PRESIDENT
J. S. EDE, TREASURER.
E. H. MCCULLOCH, GENERAL MANAGER.
W. S. GRAHER, JR., SECRETARY.
S. M. HUNT, SUPERINTENDENT.

EDISON ELECTRIC LIGHT AND POWER COMPANY,
NATIONAL BANK OF KANSAS CITY BUILDING

Dictated.

Kansas City, Dec.24, 1889.

Mr. Thos. A. Edison,

Orange, N. J.

My dear Mr. Edison:

In reply to yours of the 14th inst.,would say that I was pleased to receive from Mr. Hix the biographical data, much of which was new to me. From it and other matter in my possession,a very interesting sketch can be written.

I am also indebted to you for a most acceptable Christmas card,in the shape of a photograph,which is an excellent likeness,and a compliment to me which I fully appreciate.

I trust that you have ere this received by the hand of Mr. Hix my letter of the 13th inst. I herewith enclose a copy of a letter upon the same subject.

Hoping to hear from you in the near future, I remain

Yours very truly,

Thos. A. Edison

[ENCLOSURE]

4-G L

EDISON ELECTRIC LIGHT AND POWER COMPANY.

Dictated. Kansas City, Dec.16, 1889.

Mr. W. Preston Hix,

Edison General Electric Co.,

#44 Wall St., New York City.

My dear Mr. Hix:

Mr. Coates has just called to get my suggestions as to special work for menus during the four days of the convention and I have suggested that he make up his designs for the menus for the four days of very light portraits together with illustrations of the most important work of Edison, Sprague, Rowland and Thomson. Take for instance the Edison day. Let Edison's shadow portrait appear on the menus for the three meals accompanied for first meal, by illustrations of his Telegraphic and Telephonic work; for the second meal, by illustrations of work in Acoustics; and lastly by illustrations in Electric Lighting. I suggested that he make the dishes bear prefixes and suffixes of a technical nature appropriate to the theme of the meal.

Mr. Coates is very anxious to get out something entirely new, elegant and appropriate, and does not object to a considerable expense for this purpose. In case you think that Mr. Edison would not be displeased by such publicity, I shall depend upon you to furnish photograph and cuts as soon as we are certain of the phonograph discussion. I hope that you have succeeded in regard to the phonograph discussion as its importance to the Edison interests becomes daily more apparent. Mr. Edward H. Allen, who you will remember is president of the Board of Trade, to-day spoke of it as of the deepest interest and as certain to attract wide attention.

Hoping to hear from you at your earliest convenience, I remain

Yours very truly,

1889. Electric Light - Edison Electric Light Company of Philadelphia (D-89-37)

This folder contains correspondence and other documents relating to the business of the Edison Electric Light Co. of Philadelphia. Most of the letters are by William D. Marks, general manager of the company. There are also reports by Marks to the company's board of directors concerning the construction and operation of central stations and a blueprint containing a transverse section of the Philadelphia central station.

Approximately 50 percent of the documents have been filmed. The following categories of documents have not been filmed: routine correspondence concerning orders; duplicate copies of selected documents.

Philadelphia, Jan. 1st. 1889

To the President,

and the Board of Directors,

of The Edison Electric Light Co. of Phila.

Gentlemen:-

In accordance with your Resolution:- "RESOLVED that The Treasurer in conjunction with the Supervising Engineer be requested to furnish the members of the Board with a Statement of the amounts due, or to become due on the outstanding contracts of this Company", passed Dec. 18 - 1888, we beg to report as follows: Assuming that you desire to learn all the amounts yet to be paid, whether due on contracts made, yet to be made, or for labor, incidentals, salaries of Engineering Departments, etc., etc.

The amounts expended for Charter, permission to get into the Streets of Philadelphia, payments to Edison Company of N. Y. Salaries of President, Counsel, Sec'y, etc., as being outside of the province of your Engineer did not appear in his original estimate and do not in this final estimate of the cost of the works ready to start with 16,000 lights capacity.

Estimated cost for 8000 lights at start,	$523,000.
Added to increase to 16,000 lights at start,	13,600.
	$536,600.

There remains yet to be met the payments upon machinery to increase our capacity to 24,000 lights during the coming summer, but these liabilities will not arise until we have been running for some time, and your Engineer has therefore not taken them into consideration at present.

The building as originally designed contemplated the construction of a coal storage room for 1000 tons and a general Office above. In order to keep within the first estimate of cost

those two stories were omitted for the present and a temporary roof put over the boiler floor. This completes all the building necessary for machinery, but temporarily compels us to store coal in Wm. Bryant's yard and to hire offices. The Memo of payments to be made has been arranged so as to show the earliest date at which payments can be called for, and does not cover payments outside of the engineering work.

The Final Estimate will cover the cost of the Works running with 16,000 lights capacity. If the Mortgage $25,000. is counted in it exceeds estimated cost, $536,600. by $14,000 or leaving the unpaid mortgage out $11,000. less will be spent than was called for by the estimate given.

PAYMENTS TO BE MADE	JANUARY	FEBRUARY	LATER (6 Mos)
EDISON MACHINE WORKS:			
Dynamos 8 - 1000 Amp.140 Volts Machines		25000.	
" Freight and Erection,		1600.	
Thos.Kirkwood 180 Sq.Ft. Grate bars,	811.20		
Sidebotham & Powell, 3 Purifiers and 2 Separators,	1439.00		
Abendroth & Root Mfg.Co. Balance due on Boilers,	3689.86		3689.86
J.Baizley,Blocks,Tackle & Winch,	407.35		
A.Falkenan, Travelling Cranes	900.00		
Services to Houses, estimated pay roll, permits to City &c.	500.00		
Armington & Sims - 4 Engines and Separate parts $3428.	10662.40		2665.60
Allison & Co. 60 Equalizers at $17.	1020.00		
Edison Machine Works - 60 Equalizers Commutators at $75.		4500.00 ~~4662.00~~	
Labor and Freight, 60 Equalizers Commutators at $5.	300.00		
Bergmann & Co. Ampere Meters		2800.00	
Thos.H.Doan,Oak Ceiling Strips,	60.00		
" " Wood floor and painting Dynamo Gallery,	135.00		
Thos.H.Doan, Strips above wainscoting	70.00		
" 334 Poplar bushings at 14¢	45.36		
" 300 Oak cable Supports at 15¢	45.00		
A.Falkenan Dynamo Gallery	400.00		
Edison Mac. Works Bus wiring,		8000.	
" " " Cables,		2000.	
C. Rebmann & Co. 600 Castings,cable supports,	50.00		
Alonzo Bell & Co. Coils for Equalizers,	100.00		
Edison Mac. Works, Cables feeders,		4073.10	
A.Falkenan, Exhaust pipe,	5800.00		
Steam piping ordered	1500.00		
Steam piping yet to be ordered		1500.	
Henry I. Snell Blast piping,	2100.00		
Thos.H.Doan,Bal.due on Cont.for Bldg.	13000.00		
" Amt.of " " " Roof	2850.00		
" " " Extras		2000.	
Quaker City Slate Co.	1376.00		
C. Rebmann & Co. Cast Iron Floor Plates and Chimney caps.	3800.00		
Robt. Wood, Scale Carb,	230.00		
Barr Pumping Engine Co. Bal due on Pumps	615.00		
Henry I. Snell Blast Fan-8 ordered,	1575.00		
Fulton & Walker Co. 2 coal wagons,	810.00		
F. Toomey, 2 ash cars,	650.00		
" 4 Charging Barrows,	324.00		
Crane Elevator Co.Bal.due on Coal Hoist,		500.	
C.W.Army & Son, 2 belts		365.	
Barr Pumping Engine Co. Automatic Receiver & Pump,		225.	
C.H.Clunn & Co. Digging Well	2500.		
Chas. L. Ireson, 2 Belts,		437.50	
Jones & Henner Co.Iron Railing for Pumps, & Purifier,		147.40	

	JANUARY	FEBRUARY	LATER (6Mos.)
Schultz Belting Co. 2 Belts		340.	
Jewell " " 2 Belts		270.	
Edison's Bust & Bracket,	100.00		
Estimated Pay Roll, Petty Cash and Salaries a/c Engineer's Office	4000.00		
	61365.17	54358.	6355.46

January Payments,	$61,365.17
February	54,358.00
Later (6Mos.)	6,355.46
Total,	$122,078.63

FINAL ESTIMATE 16000 LIGHT STATION

Edison Electric Light Company of Philadelphia.

Real Estate,	13326.08
Building, Iron Works, etc.	132192.72
Boiler, Feed and other Pumps,	918.00
Steam Heaters, (2)	2800.00
Coal Hoist, Cars and Scales,	4223.69
Blast Fans, (8)	3150.00
Steam and Exhaust Water Piping,	11808.76
4 Engines, 440 H. P. put up,	17125.36
8 Dynamos, 1000 Amp.	27200.00
Cranes, Hoists, &c.	1730.53
Electric Mains and Feeders,	224695.56
Meters and Fittings,	1500.00
Services to Houses,	6793.47
Station Apparatus for Electrical measurements	
Bus Wires and connections,	28110.65
Stock of Lamps 15000,	5723.00
Incidentals plus $4000. to be spent Jan. and Feb.	27314.40
Boilers,	17043.35
	525652.57
Add for Mortgage on Real Estate,	25000.00

Your Engineer desires to again call your attention to the fact that the right to extend under the Charter of the Penn Electric Light Co. expires Feb. 26, 1889 and to request your thoughtful consideration of means for further extension as required, should the Penn Electric Light Co. fail to get a prolongation of time.

We have at present underground sufficient copper to carry nearly 50,000 - 16 Candle Lamps. We shall have an ultimate capacity in our station of 100 to 120 thousand Lamps and will probably desire to increase our machinery to that amount. The field is at present unoccupied and the demand for Electric Light will prove practically unlimited at the same price as poor gas. While it is wise not to depart from precedent in other cities and we have therefore fixed the price of lights at 1 1/8 cents per lamp hour, we may after six months or a years experience deem it wisest to meet the present price of gas $1.50 per M squarely and charge 3/4 cent per lamp hour and load our station to its fullest capacity with great profit to the Company.

This can be presented for the consideration of the Directors after the actual cost of producing light in this Station has been practically reached.

We have on hand some $10,000. worth of Electrical feeders and mains which we have been prevented from using because of our inability to get into Chestnut Street from 9th to 3rd. We have made temporary arrangements to feed the Chestnut Street District as far as 5th from 9th by means of Callender cables drawn into the Penn Conduits costing some $5,000. or over.

For services $5,000 small tubing has been reserved and is now in stock.

Your Engineer visited the Edison Machine Works, Schenectady, Dec. 28 and 29 and tested two Dynamos of 1000 Amp and found them well made and efficient giving 93 % of the electricity generated in the outside circuit. They will be shipped to-day. The Omnibus Wiring is promised Jan. 15th. At Borgmann & Co. the ampere meters are nearly completed and shipments will begin this week. I am,

Very Respectfully and Truly Yours,

Supervising Engineer,

and General Manager.

Phila. Feb. 19th, 1889.

To the President and the

Directors of the Edison Electric Light Co.

of Philadelphia.

Gentlemen:-

The first two Dynamos and the first copper fittings for Omnibus Bars were received about the beginning of this month. Within two days all of the Copper for Omnibus Wiring has been received - some few fittings are yet to come. We have now four Dynamos up, two complete, two lacking switches and connections only and are promised two more this week.

Three Armington & Sims Engines are now erected and are having their final copper connections to steam and exhaust piping put in. The fittings for same are now here and being attached.

Many vexatious delays have been and are occurring owing to your Engineer's insistance upon no makeshift or temporary work and the apparent inability of contractors to realize that any careless work will be instantly stopped until the best materials and most workmanlike methods are employed.

The three Root Boilers have had drying out fires under them for a week and have so far developed no defects or leaks.

Since your Engineer has had material to work with, work has not stopped night or day, as many men being employed as it is possible to procure and work in the Station, save on Sundays when work is stopped by the special request of your President.

We are liable to start almost any day now, but may be delayed by poor work, accidents or broken promises, for your Engi-

neer believes that you desire above all things that the record of this Company shall be one of uniform excellence and certainty of light, and will demand of him the utmost care to this end.

It is proper here, at the beginning of our work, to say that in the arrangement of the machinery of your station your Engineer has had in view as a controlling consideration the earning of dividends and has sacrificed all ornament and economized space for that reason.

It is also of interest to add that in order to secure an equal certainty of light to that of gas your Engineer has adopted a double system of Omnibus wiring in the Station which will enable us to repair all leaks and accidents without depriving our customers of light or power at any time, besides producing greater economy of power .

I am assured by one motor Company that they have 35 motors, large and small waiting for our current, and by another, that 10 motors of considerable power each will be put in. Your Engineer is certain that the sale of motive power will bring to this Company a large income.

Neglecting this for the present, a discussion of the probabilities of the first six months, based on secured lights run will be of interest.

We will assume, to be on the safe side--

15,000 Lamps burning 1 hour per day,

182 1/2 hours at 11/8/ 15,000 Lamps-----$30,765.00

or for one month,----------$ 5,127.50

Our Pay Roll will be approximately as follows:-

Sup. Engineer	541.67		
Assistant to him	125.	666.67	
Foreman Dynamo Room	100.		
Alternate	75		
Four Tenders	$300	375.	
Foreman Engine Room	90.		
Assistant to him	75		
Four Firemen	240.		
Two Oilers	120.	525.	
Weigh Master	50.		
Two Coal Passers	80.		
One Sweep	40	170.	
Two Log Book Keepers		90.	
Foreman Service Work	75		
Two Jointers,	150.		
Two Diggers,	90.		
One Draftsman	75.	390.	
One Storekeeper	75.		
One Helper	45.	120.	
One Meter Expert	75.		
Two meter boys	60.		
One man	45.		
Two Bill Collectors	120.		
One Book Keeper,	75.	375.	
Chief Clerk	100.		
Stenographer	40.		
General Agt.	100.		
Two ~~Competent~~ Complaint & Inspectors men	120		
One Office Boy	15.	375.	$3086.67.

BROUGHT FORWARD		$3086.67
Coal 5 tons per day 150 tons at $2.25	337.50	
Oil and Waste	50.	
Office Expenses and Incidentals	150.	537.50
		$3624.17
Balance, ----------		$1503.33
		$5127.50

From the balance of $1503.33 will further be deducted the salaries of President, Secretary and Treasurer.

It would appear from the very moderate estimate of earnings made that there is a certainty of the Station more than paying its own way from the outset and by next winter it will probably earn large dividends on lighting alone, to which will be added the profits from motors, lamps, renewals and isolated Plants and materials, amounting to over $500. per month.

I am,

Very respectfully and truly yours,

Supervising Engineer and General Mgr.

Legal Co's - 1880

Office: No. 927 Chestnut Street

TELEPHONE 2129

I. D. BROWN, President. E. P. KELLY, Treasurer
B. E. JAMISON, Vice-President HENRY G. BRYANT, Secretary

CAPITAL, $1,000,000

The Edison Electric Light Co.

OF PHILADELPHIA

Services and lamps free of Charge
Current Sold by Meter
Circulars on Application

Address Communications concerning Services, Lamps, Wiring, Meters, Repairs, Current, &c., to

WILLIAM D. MARKS
Supervising Engineer and General Manager.

Office
909 Sansom Street
TELEPHONE 820

Central Station: 908 Sansom Street
Address: 909 SANSOM STREET,
TELEPHONE No. 820.
Philadelphia, Feb 27 1880

Dear Edison —

You shall have a full set of the Blue Prints of that Steam Ad Soon as I can get them out if you still desire them after knowing that they number about 2500 to 3000, and will cost about as many dollars. Mr Field asked me for a large number but as you will see from the Enclosed Copy of my letter to him I did not feel authorized to do the work for him at the Company's Expense I have however sent him copies of the 11 drawings to go to the Paris Exhibition & offered to advise & assist him in every way I could for my personal Expenses & Knowledge.

Will write you soon

Yours truly

Wm D Marks

To
Mr Thos A. Edison

[ENCLOSURE]

H co' - Phila

THE EDISON ELECTRIC LIGHT CO., OF PHILADELPHIA. TELEPHONE NO. 2126.

L. D. BROWN, PRESS. B. K. JAMISON, VICE-PRESS. P. F. KELLY, TREAS. HENRY G. BRYANT, GEN'L.

OFFICE, 927 CHESTNUT ST., PHILA. PAY BILLS AT 927 CHESTNUT STREET, 2D FLOOR.

ADDRESS COMMUNICATIONS CONCERNING SERVICES, LAMPS, WIRING, METERS, MOTORS, AND ALL MATERIALS, TO WM. D. MARKS, SUPERVISING ENGINEER AND GENERAL MANAGER, AT CENTRAL STATION, 903 AND 905 SANSOM STREET. TELEPHONE NO. 820.

IF YOU WANT CHEAP POWER, USE A MOTOR.

THE EDISON CURRENT IS ABSOLUTELY FREE FROM DANGER TO LIFE.

SERVICES AND LAMPS FREE OF CHARGE. CURRENT SOLD BY METER. CIRCULARS ON APPLICATION.

(Copy)

PHILADELPHIA, 2/7 1889

Mr. Chas. J. Field
Genl. Mgr. E.E. Ill. Co
26 & 28 Court St. Brooklyn N. Y.

Dear Sir:-

In reply to yours of the 6th current, I would say that personally I am & always will be pleased to afford any assistance within my power, to the Engineers of the Edison Electric Light Co. Your request for B. P has assumed such proportions that I fear that the directors of this Co. would feel as if, - that for which they had paid a great deal, probably $10000 or more, exclusive of my own salary, was being diverted for the benefit of other corporations without any proper return to them. I would like to say, however, that if it should appear to your Co. that a station modelled after ours, which promises to be most profitable is desired by them, I shall be pleased to make completely reworked drawings and furnish to your Co. blue prints to the extent of 6 each, for the sum of $5000.00 This will be wholly a matter of the Philada

[ENCLOSURE]

THE EDISON ELECTRIC LIGHT CO., OF PHILADELPHIA. TELEPHONE No. 9189.

L. D. BROWN, PRESP. B. K. JAMISON, VICE-PRESP. P. F. KELLY, TREAS. HENRY G. BRYANT, SECY.

OFFICE, 927 CHESTNUT ST., PHILA. PAY BILLS AT 927 CHESTNUT STREET, 2D FLOOR.

ADDRESS COMMUNICATIONS CONCERNING SERVICES, LAMPS, WIRING, METERS, MOTORS, AND ALL MATERIALS, TO WM. D. MARKS, SUPERVISING ENGINEER AND GENERAL MANAGER, AT CENTRAL STATION, 908 AND 910 SANSOM STREET. TELEPHONE No. 920.

IF YOU WANT CHEAP POWER, USE A MOTOR.

THE EDISON CURRENT IS ABSOLUTELY FREE FROM DANGER TO LIFE.

SERVICES AND LAMPS FREE OF CHARGE. CURRENT SOLD BY METER. CIRCULARS ON APPLICATION.

PHILADELPHIA,.....188

60. and not a personal one. It cannot but be an extremely economical way of procuring your drawings and will result in great convenience to yourself, since the trifling modifications required during erection of our completed station will all be introduced. The many and difficult problems which have presented themselves have absorbed much of my time & you will find it personally a great relief to be able to devote yourself exclusively to oversight of the erection which will require not only your constant personal vigilance but also that of a couple of inspectors, & is above all things the most important.

Yours very truly

(Signed) Wm D Marks

Sup. Engr. & Genl Mgr.

THE EDISON ELECTRIC LIGHT CO., OF PHILADELPHIA.

L. D. BROWN, PRESt. B. K. JAMISON, VICE-PRESt. P. F. KELLY, TREAS. HENRY G. BRYANT, GEN'L.

TELEPHONE No. 3128.

OFFICE, 927 CHESTNUT ST., PHILA. PAY BILLS AT 927 CHESTNUT STREET, 2d FLOOR.

ADDRESS COMMUNICATIONS CONCERNING SERVICES, LAMPS, WIRING, METERS, MOTORS, AND ALL MATERIALS, TO WM. D. MARKS, SUPERVISING ENGINEER AND GENERAL MANAGER, AT CENTRAL STATION, 908 AND 910 SANSOM STREET. TELEPHONE No. 820.

IF YOU WANT CHEAP POWER, USE A MOTOR.

THE EDISON CURRENT IS ABSOLUTELY FREE FROM DANGER TO LIFE.

SERVICES AND LAMPS FREE OF CHARGE. CURRENT SOLD BY METER. CIRCULARS ON APPLICATION.

PHILADELPHIA, 3/2 1889

My Dear Mr. Edison

Yours of the 28th ultimo and have ordered blue prints of the Station as proposed for the Paris Exhibition also of the Steam & Exhaust piping and Plaster piping. The Exhaust piping will merely be for blue printing

I will be glad to send you drawings of all the Electrical Work if you wish but fear you will think it too elaborate from what you have said. Yours truly

Wm D Marks

Address: 909 SANSOM STREET,
TELEPHONE No. 820.

Ans March 4/89

H.C. Form No. 1.

THE WESTERN UNION TELEGRAPH COMPANY.

This Company TRANSMITS and DELIVERS messages only on conditions limiting its liability, which have been assented to by the sender of the following message. Errors can be guarded against only by repeating a message back to the sending station for comparison, and the company will not hold itself liable for errors or delays in transmission or delivery of Unrepeated Messages, beyond the amount of tolls paid thereon, nor in any case where the claim is not presented in writing within sixty days after sending the message.

This is an UNREPEATED MESSAGE, and is delivered by request of the sender, under the conditions named above.

THOS. T. ECKERT, General Manager. NORVIN GREEN, President.

NUMBER	SENT BY	REC'D BY	CHECK
19	Od	ab	54 Paid

fonck Miller 6 12

Received at ORANGE, N. J. 1148 9/6 1887

Dated Philadelphia Pa 6

To Thos A Edison

Orange NJ

Ran seven hours last night in multiple arc seven hundred lamps. Dynamos engines boilers & steam pipes have given no trouble I would Consider it a personal favor if you would Come over this evening & tke my guest let us know on what train

Form No. 1.

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This is an UNREPEATED MESSAGE, and is delivered by request of the sender, under the conditions named above.

THOS. T. ECKERT, General Manager. NORVIN GREEN, President.

NUMBER	SENT BY	REC'D BY	CHECK

Received at ORANGE, N. J. 188

Dated

To

you will arrive. Sims is here

Kruesi has gone

Wm D Marks

Form No. 1.

H.C.

THE WESTERN UNION TELEGRAPH COMPANY.

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This is an UNREPEATED MESSAGE, and is delivered by request of the sender, under the conditions named above.

THOS. T. ECKERT, General Manager. NORVIN GREEN, President.

NUMBER	SENT BY	REC'D BY	CHECK
13	Wi	ab	18 Paid

fonck Miller 6 12

Received at ORANGE, N. J. 1048 9/7 1887

Dated Phila da Pa 7

To Thos A Edison

Run of last night eight hours was without a single accident or trouble of any sort or kind

Wm D Marks

Philadelphia, April 15, 1889

TO THE PRESIDENT

AND THE BOARD OF DIRECTORS

Of the Edison Electric Lt. Co. of Phila.

G e n t l e m e n : -

Since the starting of the Station on March 5th last it has run without serious accident or break down, but many details that should long since have been completed have been delayed by reason of delays occurring in the Edison Shops and Lamp Works. However, much to be regretted these delays are I am constantly met by the assertion that they are doing their utmost and that these works have been erected in a much briefer space of time than any before attempted, although the largest in capacity of any ever yet built.

I shall not relax my efforts to get the last detail here and the Station completed promptly.

The illness of the Representative of the Edison Machine Works who has charge of the repairs for one year from March 5th, 1889 under a guarantee for that time has prevented the prompt correction of faults in our underground system that I could have wished. But I trust that with his return I shall be able to push this work as rapidly as the City authorities will permit us. We are much delayed by the necessity of getting a permit signed for each hole that is dug and are frequently further embarrassed by the temporary absence of the City Officials by whom permits must be signed and by the constant hostility of the Director of Public Works, who does not scruple to avail himself of every possi-

ble means of hindering and delaying our work, abusing his powers under Councils for this purpose.

The Penn Co has recently received a notification that after repairs to a large number of streets in our District have been made by the City no further permits will be granted for opening those streets. As to his power to enforce this decree I shall have to refer you to our Counsel. The Director has, from the outset defended his course on the ground of protecting the interests of the City Gas Works. It is a consolation, to know that we have enough conductors underground to carry 80,000 lights, and to hope that the Directors of this Company having during two years exhausted every effort of courtesy and patience may find some stronger means of urging their just claims for consideration for a beneficient enterprise, than availing submission and attempts to conciliate, should the necessity arise for further extension of their Street system or permits for connections to customers be refused. We have placed our system of electrical conductors underground in obedience to the edicts of City Councils, and can demand their protection.

In accordance with your Resolution of March 14th --

"That the Supervising Engineer be requested to furnish the Board with an estimate of the cost of laying tubes on Arch St. from Broad to Third St., with the necessary connections with the present system of tubing," I would say :

That our only practicable method is to lay heavy mains on Arch St. from 13th to 3rd Sts. with connecting mains on all cross streets from Market to Arch, and submit the following estimate.

Arch St. 15th to 3rd St.

13th St. Market to Arch

11th. St " " "

10th. " " " "

9th. " " " "

8th. " " " "

7th. " " " "

6th. " " " "

5th. " " " "

4th. " " " "

3rd. " " " " 13,200 ft.

Costing $225,000. approximately.

In response to your Second Resolution: --

"That the Supervising Engineer be authorized if in his opinion advisable to extend the tubing on 13th. St. from Market to Arch St." I would say:

That this Company has now pending a contract for lighting the Masonic Temple which, if closed, will at once demand that this tubing be laid.

Our President also suggests the possibility of lighting the Church on the Corner of Broad and Arch. Unfortunately, Church lighting, save for Catholic Churches, is the poorest lighting we have, as Protestant Churches are open for short periods but one or two nights in the week, and for the Church alone, the tubing would be an unprofitable investment.

The gross amount of wages paid during a month has been stated the Board in a previous Report.

The Electric Lighting so far obtained is larger than in

the case of any other Edison Company, and the Motor field promises to be exceedingly large.

We have had some complaints of lowering of lights at the Union League due to the accidental short circuits in our System, and in some measure to the bad arrangement of wires in the building. I deem our success with them so important that I have placed a special Inspector at the Club House from 6 to 11 P.M. with instruction to instantly report and remedy all defects appearing before the matters of running Station has settled to a steady regimen.

Sawyer and Mills of 248 S. 3rd St. are now using with great success a 10 H.P. Motor to run 15 Printing Presses and we hope to have many more subscribers. I have directed our General Agent to make contracts for one year where he finds it impossible to sell on the meter system. As it does not appear wise to obligate this Company to a fixed contract for a longer period and we now desire to introduce light and power as best we may for our start.

I append a careful report of lights and motors prepared by our General Agent.

REPORT OF APPLICATIONS, SERVICES MADE, LIGHT AND POWER CONNECTED.

NO.	NAME	LOCATION	LAMPS APPLIED FOR	POWER APPLIED FOR	LAMPS CONNECTED FOR CURRENT
1	Geo. F. Tyler,	201 S.15"	10		10
2	City Trust Co.	927 Chestnut	300		280
3	G.R.Crump	Colonnade Hotel			
4	"	"			
5	H.P.Austin	1911 Walnut			
6	Western Sav'g Fund	S.W.10"&Walnut	160		100
7	Rob't.Glendinning	Bullitt Bldg.			
8	Jno.C.Bullitt,	"	1679	" "	1679
9	Capt.Buehler,	124 S.17" St.	80	" "	
10	J.F.Johnson	126 So.17" St.	80		
11	Randolph	128 So.17" St.	80		
12	Spencer Ervin	130 So.17" St.	80		63
13	Jos.J.Solomon	132 So.17" St.	80		
14	Philip F.Kelly	120 So.18" St.	10		
15	G.B.Massey	1706 Walnut	4	2 1/8HP	
16	T.Solis Cohen	1431 Walnut	2	1/2 "	
17	T.Ewing Mears	1429 Walnut	44		44
18	T.Kirk & Son	1725 Chestnut	24		24
19	Dr.W.W.Keen	1729 Chestnut	14		14
20	Rittenhouse Club	1811 Walnut	206		206
21	Robt.Buist,Jr.	924 Market	10		10
22	Union League	Broad & Sansom	903		617
23	V.Friedel	1030 Sansom	12		
24	C.Joly	9 S.7th	10		
25	W.Morehead	11 So.7"	8		
26	W.L.Cave	115 S.17th St.		2 1/8HP	
27	E.Fox	1701 Chestnut	25		25
28	Horace A.Dean	18th & Chestnut	20		
29	Jno.C.Hart	123 S.10th	30		30
30	Chas.Wittrock	129 S.10th	8		8
31	Hotel Bellevue	Broad & Walnut			
32	Hotel Stratford	"	126		
33	Dollard & Co.	1223 Chestnut	55		55
34	City Club	1431 Chestnut	12		
35	Alex.McCuon	33 S.11th	12		12
36	Common'wth Ben.Assn	1004 Walnut	17		17
37	Phil.Sav'g.Fnd.Soy.	700 Walnut St	168		168
38	J.M.Dalosta	1700 Walnut St	117		117
39	Art Club	22 S.Broad	220		
40	Keystone Nat.Bank	Juniper & Chest.	360		
41	W.H.Waters	120 S.12"	18		18
42	D.McGowan	125 S.15" St.	20		
43	F.Bornot	1535 Chestnut	16		
44	Burk & McFetridge	306 Chestnut	22		
45	Sailor & Stevenson	33 S 3"	9		9
46	Tabornacle Bap.Ch.	18th & Chest.	113		113
47	Jno.S.Gerhard	5th & Minor	672		
48	J.H.Canavan & Co.	102 S 11"	8		
49	Petroleum Exchange	304 Chest.	15		
50	Arthur M.Burton	504 Walnut	17		17
51	Sellers Shoe Co.	1224 Market	19		19
52	Mitchell,Fletcher &Co.	12" & Chest.	48		
53	J.A.Lehman & Co,	107 S.13"	14		
54	Hughes & Muller	1057 Chest.	53		53

SERVICES, WIRING AND GENERAL INFORMATION.

POWER CONNECTED FOR CURRENT	DATE OF APPLICATION	SERVICE MADE	DATE CURRENT SUPPLIED	SERVICE MADE WIRING	WIRING DONE BUT NOT ON	WIRING DONE BUT SOCKETS NOT ON	WIRING CONTRACTED FOR	REMARKS
	May 22'88	Yes	Mar.13					
	" 28	"	" 20					
	" 30	"						Have put in a plant
	"	"						
	June 6	"	"					
	" 14	"	Mar.27					
	" "	"						
	" "	"	Mar.20					
	July 2	"				"		Will probably complete shortly.
	" 5	"				"		
	" 2	"				"		
	"	"	Apr.10					
	Jun.27	"	"			"		Deferred act.removal.
	July 9	"						
	"	"						
	" 13	"	Apr. 5					
	" 8	"	" 3					
	" 20	"	" 3					
	" 18	"	Mch.22					
	Jun.27	"	" 27					
	Aug. 1	"	" 5					
	" 13	"	"					
	" 16	"	"					Deferred.
	" 17	"	"					"
	" 17	"						
	2	"	Mch. 3					
	22	"	"					
	22	"	Apr. 1					
	23	"	Mch.22					
	31	"						
	Mch.16'89	"						
	Aug.30	"	Mch.23					
	29	"						
	28	"	Mch.27					
	Sep. 4	"	Apr. 3					
	7	"	Apr.12					
	12	"	" 5					
	10	"						
	Oct. 5	"						
	3	"	Apr. 5					
	"	"						
	8	"						
	6	"						
	Sep. 6	"	Apr. 8					
	Oct.17	"	Mch.21					
	22	"						(occupied " Bldgs.only partly
	20	"						Declined
	22	"						
	"	"	Apr.15					
	26	"	" 4					
	25	"						Deferred
	24	"						
	29	"	Apr. 9					

55	Philada.Club	13" & Walnut	200		111		Oct.30	*	Mch.19	
56	S.S.White Dental	Co. 12" & Chest.	50				Sep.12	*		Service made but wiring not done
57	P.H.Pierce & Co.	1406 Chest.	19		19		Nov. 1	*	Apl. 6	
58	P.C.Shaeffer	1216 Market	28		28		2	*	Apr. 4	
59	Reading Iron Works	222 S.5th	115				Oct.11	*		
60	Edison Elec.Lt.Co.	908 Sansom	100		50		Nov. 5	*		
61	"	909 Sansom	50		44		Nov. 5	*		
62	Cah Clumn & Co.,	915 Sansom	10				" 5	*		
63	J.R.Thompson	1220 Market	29		29		" 5	*	Apr. 4	
64	H.Gautsche & Sons	1030 Chestnut	30				4	*		Wiring done for 3 lights.
65	S.F.Whitman & Sons	12" & Market	96				6	*		Deferred taking current
66	Amer.Bk Note Co.	Drexel Bldg.		2 H.P.			Sep.26	*		Services made but wiring not done
67	Simons Bros.& Co.	618 Chestnut	124		70		Nov. 8	*	Apr. 6	Will complete wiring shortly
68	Phila.Trust Co.	415 Chest.	75				"	*		Wiring done but service not made
69	H.W.Kelsey	1104 Walnut	162				9	*		Service made but wir'g.not done Bldg.
70	Wanamaker & Brown	6" & Market					10	*		not completed.
71	Super Jones & Co.	613 Chest.	55		55		20	*	Apr. 3	
72	Blasius & Sons	1101 & 1103 Chest.	100	1 H.P.			10	*		Service made but wiring not done.Will
73	"	1119 Chest	40				10	*		wire " " " "
74	H.Van Boil	1310 Chest.	25		10		13	*	Apr.13	
75	J.Crouse & Sons	1218 Market	22		22		15	*	Apr. 4	
76	Solicitors Tr.Co.	142 S.4th	21		21		15	*	Apr. 8	
77	J.H.Livingstone	2216 Walnut	101				"	*		Wir'g.done but sock's not on.Fault on
78	Real Est.& Ins.Co.	721 Walnut	50		44		.0	*	Apr.12	tube near him. (wire later
79	W.D.Dutton & Co.	1115 Chest.	50				20	*		Service made,wir'g.not done,-will
80	C.H.Reisser	24 S.5th St.	25				20	*		Wiring done but sockets not on.
81	Spring Garden Ins.Co.	431 Walnut	108							
82	Longacre & Ewing	328 Walnut	16		16		22	*		
83	Saginaw Club	213 S.Broad	150		104		22	*	Apr. 3	
84	Thackara Mfg.Co.	1300 Chestnut	150				23	*	" 3	
85	Atkinson Bros.	931 Chestnut	16		16		24	*		Service made,wir'g.not done,not had
86	Huntingdon & B.Top.R.R.	417 Walnut	15		15		Mch.1'89	*	Apr.5	time to wire.
87	Ernest A.Wright	1032 Chest.	12				Dec.'88	*	Apr.1	
88	Irwin Megargee & Co.,	617 Chest.					Dec. 7	*		Service made but wiring not done.
89	County Ins. Co.	110 S. 4th	28				7	*		" " " " Deferred.
90	Cornelius & Rowland	1612 Chestnut	90		90		15	*		" " "
91	United Firemens Ins.Co.	419 Walnut	90				Jan.3'89	*	Apr. 9	
92	Franklin Institute	15 So. 7th					Dec.13'88	*	" 9	
93	W.R.Warner & Co.	1228 Market	35				Jan. 5'89	*		Service made but wiring not done.
94	Partridge Bros.	5th & Market	16		16		7	*		" " " "
95	Manufacturers Club	1409 Walnut	456				Dec.13'88	*	Apr. 2	
96	Franklin Fire Ins.Co.	421 Walnut	37				Jan.21'89	*		Have U.S.Plant.
97	C.W.Kennedy & Co.	1624 Chestnut	22		22		Feb. 5	*		For lecture use.
98	E.I.Wilson	1031 Chest.	51		51		"18	*	Apr. 4	
99	A.C.Yates & Co.	1010 Chest.	16		16		20	*	Mch.19	
100	T.A.Biddle & Co.	326 Walnut	24		24		23	*	Apr. 5	
101	R.G.Dun & Co.	900 Chest.	66				27	*	" 3	
102	G.T.Pearson	427 Walnut	6		6		24	*		Services made but wiring not done.
103	Groves,Wilson & Groves	1024 Mk't		5 H.P.			Mch. 1	*	Apr. 8	Wiring contracted for.
104	W.A.Phreaner	1416 Walnut	4	3 1/2H.P.	3		1	*		
105	C.Meyers & Bro.	508 Market	46	3 H.P.			6	*	Apr.15	
106	S.H.Guilford	1616 Walnut		1 1/2H.P.			5	*		Service made but wir'g.not done. Wirg
107	McLaughlin Bros.	114 S.3rd	60	10 H.P.			9	*		contracted for.
108	Collis & Levy	138 S.3rd	6		6					Not wired for lights yet.
							9	*	Apr.11	

109	S.W.Payne	219	S.Broad	32		32		Mch.12	"	Apl.11	
110	Phila.Traction Co.	812	Sansom	91		91		15	"	Apr. 1	
111	Chas.H.Wevill	101	S.15 "					14	"		Y.M.C.A.Lec.use.
112	United Security Co.	603	Chest.	167				30	"		
113	P.S.Sherman	1017	Chest.	35		35		22	"	Apl.11	
114	Fidelity Mutual Ins.Co.	914	Walnut	12				28	"		Wiring con'tedfor
115	W.P.Potts & Co.	1225	Market	38	5 1/2H.P.			15	Not yet	Wir'g done but ser-	
116	Frank E.Morgan	1629	Walnut	85				30	Yes	vice not made.	" "
117	R.J.Allen Son & Co.	1126	Market	30				22	"	Service made but wir-	" "
118	Kames & Pennypacker	125	S.3rd	5	1/2 H.P.	5	1/2 H.P.	Apr. 1	"	Apr. 8 ing not done	
119	W.W.Hallman	337	Chest.	16	1 H.P.			Dec.11'88	"		
120	Guarantee Tr.Co.	318	Chestnut	180				Mch.23'89	Not yet	Wir'g done but ser-	
121	Commercial Bank	314	Chestnut	35						vice not made	
122	H.J.Pattin	1431	Chestnut		1 H.P.			Nov.12'88	Yes		
123	H.W.Fox	417	Walnut	3		3		Apl. 4'89	"		Wiring contracted
124	Bonscher & Holmes	1527	Chestnut		1 1/2 H.P.			2	"	Apr.1	for
125	Keystone Watch Club Co.	904	Walnut	25				4	"		" "
126	Stanley Electric Co.	"		18	1 H.P.			9	"		
127	Thos.Bennett	925	Locust		5 H.P.			2	"		" "
128	Chestnut St.Bank	721	Chestnut	150				9	Not yet		" "
129	Washington Hotel	711	Chestnut	16				Feb. 5	"	Wir'g contrac'd for	Wiring done but
130	Bank	713	Chestnut	150				15	"		service not made
131	Union Tr.Co.	715	Chestnut	300				8	"		" "
132	G.B.Woodman & Co.	1239	Market					8	"		" "
133	Penn Mutual Life Co.	1010	Walnut	54				Apl.12	"		
134	Chas Hartman	51	S.3rd St.	4	1/4 H.P.			13	"		" "
135	College of Physicians	13"	& Locust	66				15	"		" "
				10577	37 7/8 H.P.	5053					

10 7/8 H.P.

RECAPITULATION.

Applications for light 10577 Lamps.

Applications for Power 37 7/8 H.P.——24 Motors.

Lights connected 5053 Lamps.

Power connected 10 7/8 H.P.——4 Motors.

No.Services in but no wiring 24

No.wired but services not in 7

No places sockets not on 7

In accordance with your authorization I have closed a contract with the Armington & Sims Engine Co. for two more Engines deliverable next September at $3700 each.

The Abendroth & Root Mnfg. Co. inform me that they are willing to close a contract for three more boilers at the same price as the first three $1325 ea

The Edison Machine Works claim to have lost money on the first eight Dynamos at $3200 each and fix the price at $4250. After consultation with our President an offer of $4000. was made to them, but they insist upon the list price of $4250. I append their letter and ask your further advice stating that all their statements are correct.

THE EDISON MACHINE WORKS.

Schenectady, N.Y. April 12, 1889

The Edison Electric Light Co.,

Prof. W.D.Marks, Sup. Engineer,

909 Sansom Street, Phila. Pa

Dear Sir: -

We have your esteemd favor of the 10th inst. with reference to the four extra #60 Machines which your Company desires us to build for them. We must confess that we do not think your offer of $16,000.00 for four machines at all a fair one, considering all the circumstances of the case.

We would remind you that we originally undertook to build a 1000 ampere machine at 140 volts that would stand an overload of 25 % for half an hour. This overload both you and ourselves at the time agreed was hardly sufficient, but considering the circumstances of the contracted space that you

had at your disposal, it was decided that you could get through on such an overload. We aimed at delivering to your Company something more than the verbal understanding called for. Both you and ourselves thoroughly recognized the advantage of this, and we were enabled, by recalculating the machine, to come within the same space, and considerably increased the weight, which meant considerably increased cost. This increased weight naturally gave you increased capacity. As a consequence we were enabled to deliver to you a machine that would not only stand the 25 % overload for half an hour, but that would stand a 40 % overload for an hour, and it was even tested to as high an overload as 61 %. You know full well the advantage of this. You know that it means very low expense for maintenance in the future.

Considering the fact that we took the contract from you prior to even a model machine being built, and considering that after we had taken the contract, we found that by increasing the weight, and consequently the cost, we would have been fully justified in coming to you and asking for an increased price, owing to this increased cost. This we did not do. After several of your machines were finished we found that we were not making any money, but that we were actually losing money. We then raised the price to a point where we could get an ordinary manufacturers profit, that price being $4250.00 per machine. Our price lists are invariably figured net, and not with the object of cutting them in order to get a contract.

Of course by curtailing the material we can make you a machine for $4000.00 but in a Station the size of yours, where

the investment in Dynamos forms so small a part of the total money spent, it is far more desirable, as you will know, to have ample margin of capacity, than it is to save $250.00 per machine on the purchase price.

Yours very truly,

Sam. Insull,

General Manager.

Notwithstanding our gratifying success so far in the introduction of light and Power, I would like with your permission to offer special premiums to wiring firms and Motor men securing customers for us and would suggest that we offer either the sum of 15 cents per lamp or the amount of light bill for two weeks to firms, obtaining new customers; also that the whole district have circulars distributed throughout it every 30 days until next Autumn.

Gentlemen, because of your own wise liberality and enterprise you have an excellent Station, capable of producing an enormous output and greater profits than have ever yet been obtained. May I ask your approval of a systematic and persistent effort to secure the largest possible returns by urging its business.

Very respectfully, Truly yours

Supr. Engr. & Gen'l Manager.

Ed. Co's

THE EDISON ELECTRIC LIGHT CO., OF PHILADELPHIA.

TELEPHONE No. 3125.

L. D. BROWN, PRES'T. B. K. JAMISON, VICE-PRES'T. P. F. KELLY, TREAS. HENRY G. BRYANT, SEC'Y.

OFFICE, 927 CHESTNUT ST., PHILA. PAY BILLS AT 927 CHESTNUT STREET, 2d FLOOR.

ADDRESS COMMUNICATIONS CONCERNING SERVICES, LAMPS, WIRING, METERS, MOTORS, AND ALL MATERIALS, TO WM. D. MARKS, SUPERVISING ENGINEER AND GENERAL MANAGER, AT CENTRAL STATION, 508 AND 510 SANSOM STREET. TELEPHONE No. 892.

IF YOU WANT CHEAP POWER, USE A MOTOR.

THE EDISON CURRENT IS ABSOLUTELY FREE FROM DANGER TO LIFE.

SERVICES AND LAMPS FREE OF CHARGE. CURRENT SOLD BY METER. CIRCULARS ON APPLICATION.

PHILADELPHIA, April 26 1889.

Mr Thos A. Edison —
Orange New Jersey —
Mydear Sir — The directors of this
Co have authorized me to make a vigorous
canvass for lights — to offer premiums
to mine men & motor men — to advertise
by circulars and news papers & otherwise
amongst other things — I desire to issue
10000 copies of your photo proof & to have
your signature, attached — If you will
kindly send me such a picture as you pre-
fer, signed, & will have it reproduced by a
cheap process for me & our pamphlets —
Your prompt reply will oblige —
Yours very truly
Wm D Marks
Supr. Engr. & Gen'l Manager.

3/ get six times the output from my machinery that I now do and add greatly to the certainty of light at all times as the Storage Stations being fed from, could come to the rescue of the Main Stations. You see also that I could obtain 6 × 2 400 000 = 14 400 000 Cubic feet of Gas from one Station per diem — The Storage Stations would require 2 Attendants and a few Laborers each to attend them — This is greater than the whole gas Capacity of Phila at present.

I Centem plate only plain lead Plates of large dimensions handled by fire engines hoist + small travelling Cranes, and the systematic recovery of the lead after plates are worn out. I need not go into details with you but if the idea in general seems feasible, will make Estimate of Storage Stations to submit to Board of Directors. Very truly yours

To Mr Thos A. Edison Fred'k Mende

In the present state of the art the loss in pumping through the station + the depreciation and the interest of the investment in batteries would more than pay 15 per cent on the

Phila. May 3 1889

My dear Sir I have today been with two committees of the City Council for Taking Illuminating Gas Lamps out of the streets and have found that matters as to Gas have never been in as good shape for our Gas as they are at present. I have never had the Gas so pure and so uniform as it is now. I do not see why the Annual Report of the Gas Trustees will not show a decrease in the cost of Gas for the year ending May 1st 1889 as compared with the cost of Gas for the year ending May 1st 1888. Matters in my Department are in good shape. I have no fear but that the Board will be pleased with the Report which I shall make to them. Yours truly

Chas. McMeen

P.S. Now I can establish 5 Storage Stations at proper points I can

Phila. May 6 1889

Dear Sir I have your favor of the 3rd inst. and have carefully considered the matter of Storage Stations for Gas. I am aware that the ultimate Capacity of one Station is 120 000 000 at once or say 600 000 cubic feet of Gas per hour — That the maximum average burning is say 4 hrs per day 2 400 000 cft of Gas per day.

I can establish 5 Storage Stations at proper points

H Col 2

THE EDISON ELECTRIC LIGHT CO., OF PHILADELPHIA.

TELEPHONE NO. 2139.

L. D. BROWN, PREST. B. K. JAMISON, VICE-PREST. A. V. SLOAN, SEC'Y AND TREAS.

OFFICE, 927 CHESTNUT ST., PHILA. PAY BILLS AT 927 CHESTNUT STREET, 2D FLOOR.

ADDRESS COMMUNICATIONS CONCERNING SERVICES, LAMPS, WIRING, METERS, MOTORS, AND ALL MATERIALS, TO WM. D. MARKS, SUPERVISING ENGINEER AND GENERAL MANAGER, AT CENTRAL STATION, 908 AND 910 SANSOM STREET TELEPHONE NO. 220.

IF YOU WANT CHEAP POWER, USE A MOTOR.

THE EDISON CURRENT IS ABSOLUTELY FREE FROM DANGER TO LIFE.

SERVICES AND LAMPS FREE OF CHARGE. CURRENT SOLD BY METER. CIRCULARS ON APPLICATION.

PHILADELPHIA, May 5 1889

My dear Sir. I have talked on Storage Station work & little & can go into it elaborately as soon as I can have them submit to you for criticism. My idea is not to go into it as an adjunct to Station proper but by means of divided Bus Bar system to use it to build up Smaller districts & to economize on labor both in the Main Station and in the Storage Station on Machinery & labor both. Can contain that so far all Small Cells & all pasted ones are more better than they are worth, but passing with lead plates and large tanks we can do something.

I find much trouble in getting something that people will keep as an advertising card & I know they will keep your photo — Can I get the requested copy? I know I am asking of you to martyrize yourself, but it is a good cause & 10000 photos will create the impression that you own this City. I note the sale of 3 Vertical Lamp Machines for Killing murderers & have 500 copies of today's Ledger for our Councils tomorrow — We are running very smoothly & paying Salaries & manufacturing Costs.

Yours very truly

Wm D Marks Supervising Engr &

Gen Mgr

To Mr Thos A. Edison —

H.G.'s

THE EDISON ELECTRIC LIGHT CO., OF PHILADELPHIA. TELEPHONE No. 3093.
L. D. BROWN, Pres't. B. K. JAMISON, Vice-Pres't. A. V. SLOAN, Sec'y and Treas.
OFFICE, 927 CHESTNUT ST., PHILA. PAY BILLS AT 927 CHESTNUT STREET, 2d FLOOR.
ADDRESS COMMUNICATIONS CONCERNING SERVICES, LAMPS, WIRING, METERS, MOTORS, AND ALL MATERIALS, TO WM. D. MARKS, SUPERVISING ENGINEER AND GENERAL MANAGER, AT CENTRAL STATION, 908 AND 910 SANSOM STREET. TELEPHONE No. 4251.

IF YOU WANT CHEAP POWER, USE A MOTOR.
THE EDISON CURRENT IS ABSOLUTELY FREE FROM DANGER TO LIFE.
SERVICES AND LAMPS FREE OF CHARGE. CURRENT SOLD BY METER. CIRCULARS ON APPLICATION.

PHILADELPHIA, May 13, '89 188

TO THE PRESIDENT

AND THE BOARD OF DIRECTORS OF THE

EDISON ELECTRIC LIGHT CO., OF PHILADA.

G E N T L E M E N : --

Under date May 10th, 1889, I have from Mr. Henry Villard of New York the following message concerning the Edison General Electric Company, for which I have been requested to become Engineer-in-Chief, and Technical Director.

"I shall ask the Board in the course of the coming week to pass the necessary Resolutions that you may be appointed as Technical Director."

"Will you please indicate in reply the earliest moment at which you will be able to assume your functions and oblige,"

(SIGNED) "Yours truly,

"H. Villard."

The present status of the Station is as follows: --

The Equalizers are all here and will be in running shape in the next fortnight. The Indicators (returned to Edison Lamp Works for necessary changes a month ago) are promised this week and will require but a few days to put in operation.

The feeder system is all running, save 3 which are now being overhauled in the Streets under Guarantee of the Edison Machine Works.

The Boilers are having some changes made in them to ensure a steady water level; the Steam Piping is finished and in good order.

The Engines and Dynamos are running very well, requiring only small matters to perfect them.

The organization of the working force is progressing nicely and we will soon have an excellent staff.

The income from Meter Customers to April 1st, $1,603.53
" " " " " May 11th, 1,135.84
$2,739.37

The cost of running the Station for one month covering all its expenses is about $3600. from which you will see that we will pay expenses during the Summer. We have over 100 light and moter meters now in use, and are adding every day to them. Offer-

THE EDISON ELECTRIC LIGHT CO., OF PHILADELPHIA. TELEPHONE No. 2129.
L. C. BROWN, PRES'T. B. K. JAMISON, VICE-PRES'T. A. V. SLOAN, SEC'Y AND TREAS.
OFFICE, 627 CHESTNUT ST., PHILA. PAY BILLS AT 927 CHESTNUT STREET, 2D FLOOR.
ADDRESS COMMUNICATIONS CONCERNING SERVICES, LAMPS, WIRING, METERS, MOTORS, AND ALL MATERIALS, TO WM. D. MARKS, SUPERVISING ENGINEER AND GENERAL MANAGER, AT CENTRAL STATION, 509 AND 511 SANSOM STREET TELEPHONE No. 820.

IF YOU WANT CHEAP POWER, USE A MOTOR.
THE EDISON CURRENT IS ABSOLUTELY FREE FROM DANGER TO LIFE.
SERVICES AND LAMPS FREE OF CHARGE. CURRENT SOLD BY METER. CIRCULARS ON APPLICATION.

PHILADELPHIA,.....189

ing commissions has proved very successful and has the advantage of inclining all Wiremen and Motor men to our system besides actively interesting employees and others.

Should you so desire I shall be pleased to make such arrangement as will enable me to remain as consulting Engineer to this Co., returning once or twice a week and overhauling the works in person and directing such further additions as will soon be required by our increasing business.

I have not as yet made definite reply to Mr. Villard desiring first to consult you, although if he does not desire to withdraw I shall be obliged to go to New York. Whatever may occur, allow me to express my regret at the thought of severing my connection with this Company, ~~to express~~, (even in part) my keen appreciation of your thoughtful courtesy, and to say that in serving you, all my labor has been a pleasure, I am,

Very Respectfully and truly yours,

Wm D Marks

Supervising Eng'r & Gen. Mgr.

Office: No. 927 Chestnut Street.

TELEPHONE 2128.

L. D. BROWN, PRESIDENT. R. R. JAMISON, VICE-PRESIDENT. A. V. SLOAN, SECY AND TREAS.

CAPITAL, $1,000,000.

The Edison Electric Light Co.

OF PHILADELPHIA.

SERVICES AND LAMPS FREE OF CHARGE. CURRENT SOLD BY METER. CIRCULARS ON APPLICATION.

Address Communications concerning Services, Lamps, Wiring, Meters, Motors, and all interests to

WILLIAM D. MARKS, SUPERINTENDING ENGINEER AND GENERAL MANAGER.

Central Station: 908 Sansom St.

Office
909 Sansom Street
TELEPHONE 2128.

Philadelphia, May 20 1889

Sup. Engr. & Gen'l Manager.

Phila. June 19th, 1889

To the President and the

Board of Directors of the Edison El. Lt. Co.,

of Philada.

GENTLEMEN: -

I have to report to you that the system of conductors for electricity is now in good working shape, slight defects will arise from time to time requiring attention but this week ends any extensive repairs under the Guarantee of the Edison Machine Works to us. I have secured an additional ten per cent discount on the copper conductors for Arch St. and its connections, making the cost of these some $2,500 less than my last estimate. I have taken advantage of the slack business of the Edison Lamp Co., to order 20,000 Lamps to be delivered to us as we shall need them during the ensuing six months. Our present stock of Lamps is pretty well exhausted. The engines and Dynamos in the Station are working very satisfactorily, the Boilers too have been gotten into very shape. As soon as I can obtain careful drawings covering every point from Abendroth and Root furnishing an additional 1000 H. P. in Boilers, and costing between $15 and $16,000; I shall order them which will complete what is necessary for a running capacity of 24,000 Lamps for next Autumn. I am very much pleased to find that our present Bills for light very closely cover the running expenses of the Station. With the ending of the active work of construction all of our energy should be devoted to securing customers. I would therefore suggest that solicitors upon commission be obtained and subject to the general direction of our Mr. Maxwell be instructed to prosecute the work vigorously.

I have also found in investigation of accounts of other Stations that the average cost per Lamp hour of a Station having 15,000 Lights is in the neighborhood of 1/2 a cent. I would therefore suggest for your consideration a reduction in the price of the Electric Light to the consumer to 3/4 of a cent per Lamp hour from October 1st, 1889. It will be necessary, in order to cover our running expenses, to keep the price of light as it is until the Summer months have passed. At 3/4 of a cent per Lamp hour we are on exactly the same basis as gas at $1.50 per thousand. It is needless to repeat to you that a 16 Candle Electric Lamp gives far more light than a 5 ft. burner of the Phila. Gas Works. It would appear, however, that if customers can be assured that their bills for the Electric Light will be no greater than for Gas and at the same time that they will obtain far more and a better light we will be enabled to secure a very large increase, almost immediately. By instructing our canvassers to make these statements during the Summer doubtless we can secure many customers in the Dwelling House District, who would like to have their houses wired in their absence, besides thus squarely meeting the price on the question of Gas we will also shut out the competition arising from isolated Plants claiming to be able where a large number of Lamps are grouped together to furnish the Electric Light cheaper than it is now furnished from the Central Station. You will observe that increase of customers does not mean any increase of pay roll for the Station, it simply means increase in coal and in Lamps and a larger number of customers at a reduced price will produce for this Company a larger net profit than few customers at the original price of 1 1/8 cents per Lamp hour.

As I have already advised you, it will be necessary hereafter for me to be in New York although I expect to return to this City at least twice a week until all construction is complete; some change however, should be made and I venture to recommend to you for promotion to the position of Assistant Engineer, Mr. Wm. H. Norris, with an increase in salary to say $200. to $250. per month. I have known Mr. Norris as boy and man for the last ten years; he is a thoroughly educated Engineer and of far more than usual intelligence. I can vouch for his integrity and his conscientious performance of his duties. I do not think that other changes will be required at present, I shall take Mr. Henderson and Mr. Castor with me to New York thus reducing the working force to the minium limit.

I do not know that it is necessary to mention it, but I have preserved copies of all the drawings of this Station made under my supervision. The original drawings are filed for reference in case they are needed in the future. I am,

Very Respectfully and truly yours,

Supervising Engineer & General Manager

1 comp 3

Office: No. 927 Chestnut Street.

L. D. BROWN, PRESIDENT. D. K. JAMISON, VICE-PRESIDENT. TELEPHONE 2128. A. V. SLOAN, SEC'Y AND TREAS.

CAPITAL, $1,000,000.

The Edison Electric Light Co.

OF PHILADELPHIA.

SERVICES AND LAMPS FREE OF CHARGE. CURRENT SOLD BY METER. ELECTRIC MOTORS FOR POWER. Address Communications concerning Services, Lamps, Wiring, Meters, Motors, and all matters to

WILLIAM D. MARKS,
SUPERINTENDING ENGINEER AND GENERAL MANAGER.

Office
909 Sansom Street.
TELEPHONE 926.

Central Station: 908 Sansom St.

Philadelphia July 7 1889

My dear Sir —

The record of this week is 1900 new lamps — This will make 20000 lamps + 60 motors before August 1st

It appears more than probable that 40000 lamps will be reached before Nov. 1st + lots of motors — I am very much pleased at this result + constant hard work + the specialization of the business policy of this Co which is one of open counters + obliging manners to all who deal with us. We have about 4000 about all expenses this month + our Company is delighted — Hope soon to have a complete return from them I am Yours truly

To Mr T.A. Edison

Wm D Marks

Ltr Co's Philadelphia

July 10th. 1889

To The President and Board of Directors,

Edison Electric Light Co.

Philadelphia, Pa.

Gentlemen : -

I have Mr. Edison's approval in bringing before you the matter of the price of light. Mr. Edison says that the Philadelphia Station, as constructed, can make more money with the price of light at $ 1.50 per thousand, than the New York Station can at $ 2. - per thousand. I have his entire approval in suggesting to you that after October 1st, the price of the electric light be reduced to $ 1.50 per thousand in gas, or $\frac{3}{4}$ of a cent per lamp hour for each 16 candle power lamp. To produce this light in the Pearl Street Station in New York costs about $\frac{1}{2}$ cent per lamp hour, when we take the total expense of a year and divide it by the lamp hours. It will cost less in Philadelphia than it costs in Pearl Street, or than it will cost in 26th Street or 39th Street, when they are running full.

At present we are selling to our large consumers at $2.25 25 % off, equivalent to $ 1.69 per thousand for gas. We are selling our motive power at 7$\frac{1}{2}$ cents per horse power, or equivalent to $ 1.12 per thousand for gas.

While we shall not reduce the price of electric light at present, I am satisfied that if we promise a reduction beginning October 1st, so that the bill for electric light shall not exceed

the present bill for gas, we will, with proper activity in solicitation and by liberal advertising, load down our station beyond its present capacity, and greatly increase our profits. With a load of 25000 lights we ought and can produce a lamp hour at a cost of $\frac{3}{8}$ cent, and we will receive for the same $\frac{3}{4}$ cent. After our receipts become sufficient to cover our payroll, the increase in cost of producing light to us means increase only in coal bill and in the lamp bill. If we can assure the public that we will give them more light and a better light, and that the gross amount of the bill to them shall not exceed the bill which they have been paying for a poor and unsatisfactory light, I am sure that a large number will meet the cost of wiring gladly, feeling that in so doing they are not putting themselves under an increase of constant charges against them. I think we will secure a number of small consumers who will use a larger percentage of the lamps they put in and render the business more profitable than it is with the present larger consumers.

May I urge upon the Board a reduction in price of $\frac{3}{4}$ cent per lamp hour, redoubled activity in solicitation, and in advertising the fact that the electric light costs no more than gas, possesses many sanitary advantages, and for all practical purposes furnishes twice the light.

I am, Very respectfully and truly yours,

Supervising Engineer & Gen'l Manager.

Gl. Elec. Af. Co.

1889.

THE EDISON GENERAL ELECTRIC CO.

EXECUTIVE OFFICES. ENGINEERING DEPARTMENT,

44 WALL STREET,

NEW YORK, July 18th. 1888

Mr. Thomas A. Edison,

Orange, N. J.

My dear Mr. Edison : - -

Herewith enclosed I hand you report of lamps during the last month in Philadelphia, showing 8055, or an average of 100 lamps a day.

I would also like to add that the Board unanimously passed a resolution yesterday afternoon, putting the price of the electric light at three-quarters of a cent ($\frac{3}{4}$ ¢) a lamp hour or $ 1.50 per M. Cubic ft., which is the price of gas in Philadelphia.

I am thus enabled to co-operate(?) with Gen. Wagner in lighting the city, and have accomplished what I trust you will consider a very great step in advance in electric lighting, which is to take it out of the category of luxuries for the rich, and make it a necessity to all alike, at a price no greater than gas with all the advantages on the side of electricity. I feel that this systematic endeavor to sell the electric light by meter, and at a price equal to that of gas is indeed a most important advance.

I would also add that the Board will be prepared, when

50,000 lamps have been reached, if any reduction is made in gas to further reduce the price of the electric light to $ 1. - per M. or ½ ¢ per lamp hour, because of the exceedingly satisfactory results obtained during the past three months.

I am, Very truly yours,

Supervising Engineer & Gen'l Manager.

[ENCLOSURE]

H. Co's - Philadelphia

THE EDISON ELECTRIC LIGHT CO., OF PHILADELPHIA. TELEPHONE NO. 2126.

L. D. BROWN, PRESt. B. K. JAMISON, VICE-PRESt. P. F. KELLY, TREAS. HENRY G. BRYANT, SEC'Y.

OFFICE, 927 CHESTNUT ST., PHILA. PAY BILLS AT 927 CHESTNUT STREET, 2d FLOOR.

ADDRESS COMMUNICATIONS CONCERNING SERVICES, LAMPS, WIRING, METERS, MOTORS, AND ALL MATERIALS, TO WM. D. MARKS, SUPERVISING ENGINEER AND GENERAL MANAGER, AT CENTRAL STATION, 908 AND 910 SANSOM STREET. TELEPHONE NO. 2126.

IF YOU WANT CHEAP POWER, USE A MOTOR.

THE EDISON CURRENT IS ABSOLUTELY FREE FROM DANGER TO LIFE.

SERVICES AND LAMPS FREE OF CHARGE. CURRENT SOLD BY METER. CIRCULARS ON APPLICATION.

PHILADELPHIA, July 17th 1889

W. D. Marks Sup Engr Elec.

Dear Sir

For your information I have to report, that since the last meeting of the Board of Directors on June 19th ~~[illegible]~~, applications have been secured for not less than 3200 lights. These are independent of the Masonic Temple, which I believe was reported at the above named meeting. The notable contracts made since that time include the following

University Club	203	lamps
Merchant & Co	122	"
McCallum & Sloan	89	"
Continental Hotel	132	"
Young Men's C. Assn	614	"
Keystone Mfg Co	500 & 600	(At new building)
S. F. Whitman & Co	40	lamps (At new store)
Chas Bonnet & Hazleton	50	" (At new office)
J. Bechtel & Co	135	"
Partridge Sons	70	"
Aldine Hotel	920	"
Arch St M.E. Church	210	" = 3055

Various smaller subscribers below 40 lights Each, swell the totals by

[ENCLOSURE]

THE EDISON ELECTRIC LIGHT CO., OF PHILADELPHIA.

TELEPHONE No. 3139.

L. D. BROWN, PRES'T. B. K. JAMISON, VICE-PRES'T. P. F. KELLY, TREAS. HENRY G. BRYANT, SEC'Y.

OFFICE, 927 CHESTNUT ST., PHILA. PAY BILLS AT 927 CHESTNUT STREET, 2D FLOOR.

ADDRESS COMMUNICATIONS CONCERNING SERVICES, LAMPS, WIRING, METERS, MOTORS, AND ALL MATERIALS, TO WM. D. MARKS, SUPERVISING ENGINEER AND GENERAL MANAGER, AT CENTRAL STATION, 908 AND 910 SANSOM STREET. TELEPHONE No. 620.

IF YOU WANT CHEAP POWER, USE A MOTOR.

THE EDISON CURRENT IS ABSOLUTELY FREE FROM DANGER TO LIFE.

SERVICES AND LAMPS FREE OF CHARGE. CURRENT SOLD BY METER. CIRCULARS ON APPLICATION.

PHILADELPHIA, July 17 1889

Several hundred, Power for 20 motors of various sizes, including one of 20 HP for Chadbourne & Hazleton at their 4th St Office and one of 7½ HP to run an Elevator, also signed for, during the same period.

300 lamps at Bellevue Hotel and 100 lamps additional at Stratford will be lighted by end of this month. Masonic Temple, Y.M.C.A. Assn, and Aldine Hotel expect light by Sept 1st And Thackara Mfg Co by Oct 1st

University Club is not quite ready, but will get light this month. Others mentioned in list are all being wired and will go into service as they are completed.

Prof Latta has asked us to locate & estimate upon 600 lamps at Broad St Station, which is being attended to with fair prospect of closing the Contract.

Yours Truly

J. D. Maxwell

B. Harris

THE EDISON GENERAL ELECTRIC CO.

EXECUTIVE OFFICES. ENGINEERING DEPARTMENT,

44 WALL STREET,

Ans. July 27/88

NEW YORK, July 25th. 1888

Mr. T. A. Edison,

Orange, N. J.

My dear Sir : -

Herewith enclosed I hand you clipping from the "Philadelphia Record", giving reporters version of the recent news of the Edison Electric Light Company.

I have assurances from the most influential members of the City Council that every facility shall be granted me in placing stations in the outlying districts.

The double 'bus bar system of the Philadelphia station affords special facilities for running a part of the machinery at a high potential.

I have the belief that a plain lead plate battery will prove durable and economical as compared with the pasted batteries, and that by using it, five storage stations can be established at radial distances of 1½ mile, thus enabling me to cover the City of Philadelphia, as shown by the red lines on the map herewith enclosed.

I have already brought this matter to your attention. I would like to add that once a storage battery of moderate durability obtained, these storage stations can be run with a minimum of

expense for attendance, - four men covering the staff.

I would also like to add that just at present the amount of money awaiting investment in Philadelphia is beyond precedent.

It seems as though any body of men having any pretension to standing in the Community have only to form a Company, and the general public would come to the front and subscribe until the stock-books were exhausted.

My long residence in Philadelphia, encourages me to believe that through proper persons such a scheme as this could be carried through.

Soliciting in behalf of my suggestion your careful consideration, I am

Most truly yours,

Wm. Wilson

Engineer-in-Chief.

Lt G- Phila

Form No. 1.

THE WESTERN UNION TELEGRAPH COMPANY.

This Company TRANSMITS and DELIVERS messages only on conditions limiting its liability, which have been assented to by the sender of the following message. Errors can be guarded against only by repeating a message back to the sending station for comparison, and the company will not hold itself liable for errors or delays in transmission or delivery of Unrepeated Messages, beyond the amount of tolls paid thereon, nor in any case where the claim is not presented in writing within sixty days after sending the message.

This is an UNREPEATED MESSAGE, and is delivered by request of the sender, under the conditions named above.

THOS. T. ECKERT, General Manager. NORVIN GREEN, President.

NUMBER	SENT BY	RECEIVED	CHECK
48			

Received at Phila Pa 3.11 P. 1887

Dated

To Thos A Edison

My Congratulations on Judge J Bradleys decision

Wm D Marke,

Philadelphia, October 15th, 1889

To the President and Board of Directors,

Of the Edison Electric Light Company,

of Philadelphia, Penna

G R E T L E M E N : --

I am pleased to report to you that the number of lights connected very closely approximate fifteen thousand, and that the number of lights applied for has reached twenty-seven thousand very nearly. We are subject to constant delays because of the inability of our wiremen to keep up with the orders, but they are now gaining on them slightly. The Masonic Temple with the thousand lights has about completed its wiring, and the chandeliers will be ready for use in a fortnight. We have obtained permits to open on all the streets applied for new tubes or mains. We are however, still unable to obtain permission from the Director of Public Works to open for repairs or services on newly paved streets. Although all of the contractors for paving have acceded to our request to be permitted to open the streets and have agreed that they will not claim this opening as vitiating their contract with the City to keep the streets in repair for three years. Our customers all seem very much pleased with the light save where we have been refused permission to open the streets for repair. The constant and needless delays in getting permits for repairs are exceedingly hard on us.

A complaint from the Aldine Hotel of an excessive bill for the first fortnight has been met and will probably be adjusted in an amicable way. This hotel used the light very largely during the first week as I know from personal inspection but a small concession on our part and the fact that they have learned that our meters are reliable, registering all the light consumed, will teach them to be more economical in the future.

The recent discussion of the electrical executions and therepeated fatal accidents occurring in the arc light systems, in New York City, have caused all forms of electric light to be looked upon as dangerous.

I have to meet this exigency, prepare a Circular to be sent to our customers either present or prospective assuring them of the fact that the Edison Current is positively harmless.

I shall also endeavor to obtain from William McDevitt a certificate that within the last two and a half years no fires have occurred from the incandescent circuits in the City of Philadelphia.

Our street work is being delayed by the Edison Machine Works which does not seem to be able to fulfil its orders for tubing promptly. Tubes ordered on the 7th of last August and since repeatedly written and telegraphed for have not yet been received.

I am pleased however to report in general, substantial progress and a largely increased consumption of light.

I am respectfully and truly yours

John W. Lieb Jr.

Supervising Engineer & Gen. Manager.

21 Cor - Phila

84

Office: No. 927 Chestnut Street.

TELEPHONE 2125.

L. D. BROWN, PRESIDENT. D. S. JACKSON, VICE-PRESIDENT. B. B. HUEY, COUNSEL.

CAPITAL, $1,000,000.

A. V. SLOAN, SEC'Y AND TREAS. W. H. NORRIS, ASS'T SEC'Y. J. T. MAXWELL, GEN'L AGENT.

The Edison Electric Light Co.

OF PHILADELPHIA.

SERVICES AND LAMPS FREE OF CHARGE. CONTRACTS FOR LIGHTING. CIRCULARS ON APPLICATION. Address Correspondence concerning Services, Lamps, Wiring, Motors, Meters, etc., to

WILLIAM D. MARKS, SUPERVISING ENGINEER AND GENERAL MANAGER.

Office 908 Sansom Street TELEPHONE 820.

Central Station: 908 Sansom St.

Philadelphia, Oct 29 1887

Mr Thos A. Edison

Orange New Jersey.

Dear Sir

I enclose Editorial of Times of today as also recent pamphlet Concerning danger of Electric light & the Remarkable results of the Edison Current We have ordered now 27100 Lights of which 17100 are connected up. We expect to get 2000 more in the next week. Making now 30000 ordered Over 200 HP of motors are now connected & Continual additions - States will form 6000 more than I gave you this month.

I will send you City of report of Phila College of Physicians Rangers on the poisonous properties of gas within the next week.

Yours truly

Wm D Marks

Mgr Elec Dept

[ENCLOSURE]

The Times

PHILADELPHIA, OCTOBER 29, 1880.

The Huge Gas Swindle.

The present supply of gas to the people of Philadelphia is simply a deliberate and colossal swindle upon every consumer. This is a grave charge to make against the Department of Public Works, but the facts, as known to all who use our gas, conclusively sustain the accusation.

The gas now supplied to consumers in Philadelphia is the worst ever furnished and no number of gas lights will make a room well lighted. Reading by gas light in this city is seldom attempted now, unless by those whose eyes can stand the severest strain; and to give even ordinary light in any room, three or four times the usual number of burners must be lighted.

This is simply a huge swindle upon the consumers of gas in Philadelphia, and it is a deliberate swindle conceived and executed to compel the people to pay double or treble price for the amount of actual illuminating gas they receive. The gas is starved in its manufacture until its candle or illuminating power is so greatly impaired that consumers must often twice or thrice the amount that they would consume of good gas, and then have dull and sight-destroying lights.

In other words, by cheapening the quality of gas in its manufacture and impairing its illuminating qualities, the people of Philadelphia are now practically compelled to pay $3 or more per thousand for the candle power that is promised and should be furnished in one thousand feet of gas; and this swindle is rapidly compelling gas consumers to abandon its use as far as possible. It is, in fact, a swindle upon consumers, and also a swindle upon the city, as it is rapidly forcing the introduction of electric and lamp lights in the homes of Philadelphia.

This intolerable swindle is not perpetrated by the Department of Public Works for any corrupt personal profit, but it is done under the delusion that by making much more gas out of a ton of coal than is in it, and thus forcing consumers to use double or treble quantities to obtain ordinary lights, the balance sheet of the Gas Works may be made to show a large profit; but it is none the less a studied swindle; a direct and most unfortunate swindle of consumers, and it must result in the very general abandonment of gas for lighting homes and thus rob the city of large patronage and profits in furnishing gas.

There is not a gas consumer in the city of Philadelphia who does not know that, bad as has been the city gas in the past, it has been worse under the management of the Department of Public Works than ever before in our history; and every man, woman or child who lights a gas-burner knows that they are swindled, and largely swindled, when they do so. They have complained only to receive offensive answers, as a rule, if they received any, and the only remedy they have is to turn to the electric lights or the oil lamps which are now used in nearly or quite every home in the city. The people are so deeply incensed at the attempt to force half-illuminating gas upon them to compel the use of double quantity or more, that gas lights for the ordinary home uses in which they have been generally employed are never seen now except when it is unavoidable. One year more of this swindle upon gas consumers, and the city will be swindled not only out of all possible profits from gas, but it will be swindled entirely out of a majority of consumers as patrons of city gas.

It is simply a huge swindle; a cheat by artifice or false pretence, and it is not the less a swindle because the money fraudulently extorted is not corruptly stolen. It is the logical result of either incompetent or unscrupulous effort to manufacture and sell half-price gas at double cost or more to consumers, and it is certain to rob the city of legitimate profits in the near future, just as it is now robbing consumers who are compelled to use it. It is a swindle; neither more nor less, and it is a double swindle, as it is certain to swindle both city and consumers.

THE EDISON ELECTRIC LIGHT CO., OF PHILADELPHIA

OFFICE OF THE COMPANY, 65 SOUTH FIFTH STREET.

IF YOU WANT CHEAP POWER, USE A MOTOR.

THE EDISON ELECTRIC MOTOR IS PRACTICALLY FREE FROM DANGER OF ACCIDENT.

Philadelphia, Oct 18th 1880

Dear Sir

Owing to the many discussions in the newspapers of Electric operations and of the fatal accidents resulting from carrying too large a current into dwellings, we deem it proper to advise you that there is no possible risk to life from the low pressure current used by the Edison Electric Light Company of Philadelphia.

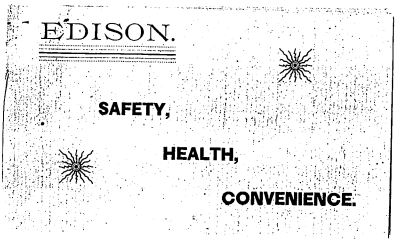
The Edison system of electrical conduction is placed under ground, and the current used is not felt to be able to give even an annoying shock to persons touching the wires.

Respectfully

Pres't Edison Electric Light Co. of Phila.

[ENCLOSURE]

[PHOTOCOPY. ORIGINAL IS IN PRIMARY PRINTED COLLECTION]



Philadelphia, Dec. 18th, 1889

To the President
and the Board of Directors of the Edison Electric
Light Co. of Philadelphia.

Gentlemen:-

Concerning the increase in lighting I am pleased to report as follows.

Week ending Dec. 14th, 1889, lamps connected 22727--16 c. 202 and 1-24th H.P. equivalent to 25151 - 16 c. Applied for 33438 - 16 c. 308 1-12th H.P. equivalent 37135 - 16 c.

The very important matter of insurance inspection of electric light wiring has come up and several conferences have been held at which were present Messrs Whiting, Sec'y. of Board of Underwriters of Philadelphia. Messrs. DeCamp & Law of the Electrical Trust, Mr. Christian, representative of a small arc light company, in the northern part of this city and myself.

As you will see from my appended letter, I was satisfied of the justice of a small payment by this Company of 1 cent per light for annual reinspection and was willing to collect 6 2/3 cents per light for the first inspection of wiring from wiremen but as this Company does not do any house wiring and makes no profit from it, I do not deem it necessary or proper that any considerable sum should be annually paid directly from this company's treasury for work of re-inspection of house wiring or that any arrangement save that temporarily necessary to tide over any immediate opposition from the Board of Underwriters should be effected.

I append for your information.

(1) My own letter to Sec'y of Board of Underwriters.

(2) Gen'l. letter to Companies of Phila. from Mr. Whiting Sec'y. of Board of Underwriters.

(3) Telegram from F. S. Gorton, of Chicago, Edison Co.

(4) Letter from C. L. Edgar, Manager of Edison Co. of Boston.

(5) Telegram from J. F. Beggs, Manager of Edison Co. of New York.

---:::---

As you will see from my statement, this Company has now the great majority of the electric lighting of Philadelphia. It ought not to pay a cent more than the necessary salary of such inspectors as are required to meet temporarily the salaries of special electrical inspectors and that too only for a short term of years.

I would request therefore of the Board that a Committee be appointed to meet a similar committee of the Board of Underwriters, that any arrangement that is effected by most carefully considered with regard to its ultimate effect and be reduced to writing.

I am

Very respectfully and truly yours.

Wm. D. Marks

Sup. Engr. & Gen'l. Mang'r.

(No. 1) Dec. 2nd,

P.W.Whiting,Sec'y.

Phila. Fire Underwriters Association.

138 South 4th St.Phila.

Dear Sir:-

Referring to Committee meeting concerning insurance inspection of this afternoon, I would say that this Company especially desires a thorough and competent inspection of all its wiring at the hands of independent and reliable inspectors and therefore will be pleased to do all in its power to assist to this end.

I would be pleased to recommend to our Board of Directors the following arrangement.

Fee for incandescent lights $1.00 for 15 lamps, the same to be collected of the wiring firm by us, we to deliver the certificate and collect the money, for every first inspection turning the same over to you..

Fee for annual inspection thereafter $1.00 per hundred lamps, on delivery of certificate of inspection to be paid by this Co.

Total amount of inspection not to exceed $3500.00 per year,without special arrangement. Isolated inspection to be credited to inspection account. This Co. to bear its due proportion of cost of total inspection arc lights at 80 cts. incandescent lights at 6 2/3d cents each.

Surplus or deficiency to be divided amongst parties inspected in proportion to payments made for inspection. This ar-

rangement to be tentative and to be subject to modification should equity seem to demand a change.

Very respectfully

Wm. D. Marks.

Sup.Engr.& Gen'l.Mangr.

Phila. Decmr. 7,1889: (No.2 copy)

Edison Electric Light Company

927 Chestnut Street,Philadelphia.

Gentlemen:-- I am instructed to communicate with your Company in relation to the subject of an inspection Department for dynamos, electric lights and wires, to also include motors. The Electric Light Companies, the public, and the insurance interests demand that this work shall be supervised and occasionally inspected by an independent inspection department, and the extent of the work is such that the burden of expense cannot be borne entirely by the insurance interests. We have recently called a meeting of the electric light companies at this office for the purpose of consulting in regard to this work, and the result of this interview has been that the principal companies in the city have suggested that a contribution be made by the lighting companies to the Underwriters of 80 cts. per arc lamp annually, and 6 2/3 cts. per incandescent lamp annually. On this basis--all of the Light Companies contributing--it would give a fund of about $3800.00. It is proposed to use this money in paying the salaries of one Chief Inspector and one assistant at the beginning, who are to examine and report on any new installations, and if approved,

a Certificate will be given to the Light Company, stating to them that the insurance department approves the work without prejudice to the insurance. Re-inspections will be made following this first examination, reports of which will be furnished to the Light Companies.

We ask that you bring this subject before your Company, with the request that the contribution as suggested be made, with the understanding that it is to be paid quarterly in advance, the contribution to be based on the number of lamps in use at the beginning of that quarter. If at the end of the year, any surplus exists in this fund, a pro-rata rebate will be made to the subscribers.

Kindly advise us of your intention in regard to this subject as soon as possible, for it is desired to put the Department at work immediately. The Inspection Department is looked upon as being of mutual benefit for all parties concerned, and it is very desirable that it shall be thoroughly organized.

Very truly,

(Signed) F. W. Whiting,

Secretary.

(No. 3,copytelegram)

Dec. 17th,1889 Chicago,Ill.

W.D.Marks,
Edison Electric Lt.Co. 908 Sansom St.

Have no arrangement with Underwriters City inspection severe enough to satisfy them.

F.S.Gorton.--

(No.4 copy)

Boston,Mass.Dec. 16th,1889.

My dear Prof. Marks,

Your telegram received. We have had considerable trouble with the Underwriters in reference to paying for their inspection. We paid them Eight Hundred dollars last year and they wanted to raise us to Two Thousand, but we compromised on Thirteen Hundred. They receive a like amount from the Boston Electric Light Co. All other concerns who do any wiring have to pay for the inspection of each individual job. Of course, we do all our work subject to their inspection, and in general do everything in harmony with them.

Yours very truly

C. L. Edgar,

General Manager

Wm.D.Marks, Gen.Mangr.
Edison Elec.Lt.Co.,
Philadelphia,Penna.

(No. 5 J.I.Beggs Tel)

Prof. Wm. D. Marks,

My Dear Sir:-

You are now down to 20th. & Spruce Sts. with your tubes. I reside 2033 DeLancey Place, and would like very much to have my house lighted.

There is a small street between DeLancey Place and Spruce St. and and if you could run your tubes there, I am confident that you could get at least twenty houses on the north side of DeLancdy Place and on the south side of Spruce St.

I think that the small street mentioned is a private street and have sent to find out. Do your best to get me this service and oblige,

Yours truly,

Signed R. H. C. Hill.

To the President and Board of Directors, of the

Edison Electric Light Co.

Gentlemen:-

Mr. Hill's request to us shown above is a fair exemplar of requests we are receiving both verbal and written.

You are aware that in addition to the Arch St. District we have laid or are laying tubes on 19th. St. on 20th. St. on Chestnut St. from 1914 to 22nd. on Sansom St. from 19th. to the Aldine Hotel on 11th. from Walnut to Spruce, on Juniper St. from Filbert to Arch, on Arch from Broad to 15th. St. on 15th from Arch to Market St. on Filbert from 9 th. to 13th. St. In addition to this we are keeping 5 gangs of service men at work. All this means a large additional expense added to that authorized by the Board in directing the Arch St. district to be

laid,I therefore before taking any action would be glad to have you indicate your wishes as to granting Mr.Hill's request.

We have at present 25615 lamps ordered of which 14095 are tonight connected,we have 203 H.P.motors ordered of which 150 H.P. is connected. We have also the application of Mr.McLaughlin for 200 H.P.in motors for the new Times Bld'g.on Sansom St.Se.side above 8th. Mr.McLaughlin seems very favorably disposed to my proposition to furnish the entire power for running the building.

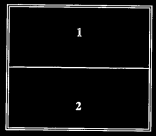
The bills of the week amount to about $ 1600. as against $ 800.running expenses.

The continued laying of street conductors will require a large outlay of invested capital and will result in a profitable business,but I hesitate to ~~accede~~ *accede* to Mr.Hill's request preferring that you should decide whether or no the work of laying conductors should be continued,I am

Very respt.& truly yours,

Sup.Eng.& Genl.Mgr.

[FILMED IN SECTIONS]



Streets of Philadelphia

Within a radius of one mile of the central station of the

Edison Electric Light Co. of Phila.

Streets	Vacant	Edison Co.	Penn Co.	Remarks
Delaware Ave.	German to Vine	[illegible]	[illegible]	
Swanson	Catharine to Lombard	[illegible]	[illegible]	
Penn	Bainbridge - Pine	Jan. 27th 1888	Feb. 15th 1887	
Water	Dock to Callowhill		Feb. 15th 1887	
Front			Queen to Callowhill	
Letitia	Chestnut to Market			
New Market	Vine to Willow			
Second		Arch to Walnut	Christian to Noble	
Levant	Pine to Pear			
Strawberry	Chestnut to Market			
Bank	" " "			
Bread	Arch to Race			
St. John	Vine - Noble			
Third	Queen to Walnut		Christian to Queen	
"			Walnut - Butternood	Tube laid Walnut to Market
Fourth	Washington to Walnut		Walnut - Green	" " " " "
Crown	Race to Callowhill			
York Ave.	Callowhill to 8th			
Fifth			Federal to Green	Tube laid Locust to Market
Sixth	Federal to Walnut		Walnut " "	" " Chestnut " "
Marshall	Vine - Green			
Seventh	Federal - Walnut			
Franklin	Vine - Green		Walnut to Green	Tube laid Walnut to Market
Eighth			Race - Vine	
Ninth	Federal to Walnut		Federal - Green	Tube laid Walnut to Market
Tenth	" " "	[illegible]	Walnut to Mt. Vernon	" " " " "
Eleventh			" " "	" " " " "
Quince	Lombard to Walnut		Federal - "	" " " " "
Twelfth	Federal " "			
Dean	Lombard " "		Walnut to Green	Tube laid Bonsom to Market
Thirteenth	Federal " "			
Juniper	Catharine - Chestnut		Walnut to Green	Tube laid Walnut to Market
"	Arch to Vine		Filbert - Arch	
Broad				
"			Federal to Chestnut	Tube laid Spruce to Chestnut
Fifteenth			Arch - Green	
Sixteenth			Washington to Spring Garden	Tube laid Walnut to Chestnut
Seventeenth		Arch to Walnut	Carpenter to Hamilton	
Eighteenth			" " Callowhill	Tube laid Walnut to Chestnut
Nineteenth			Catharine - Vine	" " " " "
Twentieth			Bainbridge - Race	" " " " "
Ellsworth	Passyunk to Broad		Pine to Filbert	" " " " "
Washington Ave	6th to 19th			
Market	Wissinoming Ave to 8th			
Christian	7th to 5th		3rd to 17th	
Green			Delaware Ave. to 6th	

[FILMED IN SECTIONS]

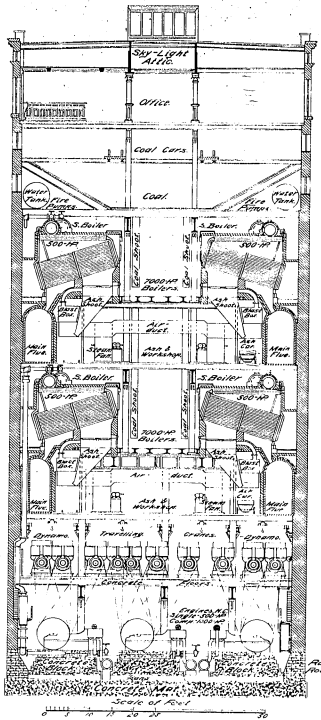
1

2

Bread	"			
St. John	Arch to Race			
Third	Vine " Noble			
	Queen to Walnut		Christian to Queen	
Fourth			Walnut " Bartonwood	Tube laid Walnut to Market
Crown	Washington to Walnut		Walnut " Green	" " " "
York Ave	Race to Callowhill			
Fifth	Callowhill to 8th			
Sixth			Federal to Green	Tube laid Locust to Market
Marshall	Federal to Walnut		Walnut "	" " Chestnut "
Seventh	Vine " Green			
Franklin	Federal - Walnut		Walnut to Green	Tube laid Walnut to Market
Eighth	Vine " Green		Race " Vine	
Ninth			Federal - Green	Tube laid Walnut to Market
Tenth	Federal to Walnut		Walnut to Mt. Vernon	" " " "
Eleventh	" "		" " "	" " " "
Quince			Federal " "	" " " "
Twelfth	Lombard to Walnut			
Dean	Federal " "		Walnut to Green	Tube laid Benson to Market
Thirteenth	Lombard "			
Juniper	Federal "		Walnut to Green	Tube laid Walnut to Market
"	Catharine - Chestnut		Filbert - Arch	
Broad	Arch to Vine			
"			Federal to Chestnut	Tube laid Spruce to Chestnut
Fifteenth			Arch - Green	
Sixteenth			Washington to Spring Garden	Tube laid Walnut to Chestnut
Seventeenth		Arch to Walnut	Carpenter to Hamilton	
Eighteenth			" " Callowhill	Tube laid Walnut to Chestnut
Nineteenth			Catharine - Vine	" " " " "
Twentieth			Bambridge - Race	" " " " "
Ellsworth			Pine to Filbert	" " " " "
Washington Ave	Passyunk to Broad			
Marriot	4th to 15th			
Christian	Moyamensing Ave to 8th			
Queen	2nd to 8th		3rd to 17th	
Catharine	L		Delaware Ave. to 6th	
"	Ddaware Ave to 8th		8th to Broad	
German	Broad to 18th			
Fitzwater	Del. Ave. to Passyunk Ave.			
Monroe	Passyunk to 19th			
Bainbridge	2nd to 8th			
South	Delaware Ave to 19th			
Gaskill			Delaware Ave. to 19th	
Lombard	2nd to 8th			
Pine			Delaware Ave to 20th	
Spruce	Delaware Ave to Front		Front " "	
Landis	" " "		" " "	
Locust	4th to 5th			
"	4th - 6th			
"	7th - 18th			
	18th - 20th			
Pear	2nd " 3rd			
Walnut		Delaware Ave to 4th	Delaware Ave to 20th	Tube laid 3rd to 23rd
Gold	2nd to Dock			
Gothic	Front - 2nd			
Sansom	6th - 8th		8th to 20th	Tube laid 8th to 20th
Library	4th - 5th			
Carters	2nd " 5th			
Inglis	Front - 2nd			
Chestnut	Delaware Ave to Front		Front to 20th	Cable 3rd to 8th Tube 8th to 17th
Minor	5th to 6th			
Jayne	7th - 8th			
Marble	10th " 11th			
Girard	11th - 12th			
Banner	16th - 20th			
Market		Delaware Ave to 13th	Front to Juniper	Tube laid 3rd to Junner
"			Merrick to 20th	
Silver	12th to Juniper			
Commerce	4th - 6th			
Filbert	" "			
North	8th " 6th			
Arch		Delaware Ave to 16th	Front to 20th	
Cherry	Broad to 4th		4th to 19th	
Race	Delaware Ave to Front		Front " "	
Sergent	9th to 12th			
New	Front - 4th			
Vine	Delaware Ave to Front		Front to 18th	
Pearl	10th to 18th			
Wood	2nd " "			
Carlton	9th " "			
Callowhill			Front to 17th	
Willow	New Market to 10th			
Noble	3rd to 17th			
Hamilton	10th - Broad		Broad to 16th	
Bartonwood	3rd - 16th			
Whitehall	12th - Broad			
Nectarine	8th " 11th			
Spring Garden			6th to Broad	
Wistar	10th to 12th			
Green			6th to 13th	
Mt Vernon			9th " 11th	
Rock	Delaware Ave to 3rd			
Ridge Ave			Vine to Green	
Passyunk			5th " Federal	
Carpenter	5th to 17th			

IRST 10000 H.P. ELECTRIC
TATION - STARTED 1889.

Thos. A. Edison designed operating galleries.
John Kruesi dynamos.
Gardiner C. Sims steam engines.
Wm. D. Marks. whole construction.



TRANSVERSE SECTION

EDISON ELECTRIC LIGHT CO. OF PHILADELPHIA, PA., U.S.A.

DESIGNED BY
WILLIAM D. MARKS, PH.B., C.E.
ENGINEER, 1887 TO 1896.

NOTES.

120,000-16 c.p. lamps. Height 145 feet.
10,000 H.P. Breadth 70' -
60+100 sq. ft. per H.P. Depth 97 -

OFFICE:
PARK ROW BUILDING,
NEW YORK CITY.

1889. Electric Light - Edison General Electric Company (D-89-38)

This folder contains correspondence and other documents relating to the organization of the Edison General Electric Co. Many of the letters are by Henry Villard, a prominent financier who became president of the company. Included also are numerous letters by William D. Marks regarding a dispute over his authority as chief of the company's engineering department.

Approximately 50 percent of the documents have been filmed. The following categories of documents have not been filmed: meeting announcements; letters of transmittal; duplicate copies of selected documents.

Related material can be found in D-89-44 (Electric Railway).

EGE

Mills Annex
New York Jan 13 2d/89

Dear Mr Insull:

In response to your letter just here I would say that Mr J Pierpont Morgan's signature is secured.

W.H. Stafford

(For Villard)

Henry Villard
Mills Annex
New York

Regret having been unable to go to town this week. Writing

Edison

Sent 11:10 AM
Jan 9/89

Form No. 1.

THE WESTERN UNION TELEGRAPH COMPANY.

This Company TRANSMITS and DELIVERS messages only on conditions limiting its liability, which have been assented to by the sender of the following message. Errors can be guarded against only by repeating a message back to the sending station for comparison, and the Company will not hold itself liable for errors or delays in transmission or delivery of Unrepeated Messages, beyond the amount of tolls paid thereon, nor in any case where the claim is not presented in writing within sixty days after the message is filed with the Company for transmission.

This is an UNREPEATED MESSAGE, and is delivered by request of the sender, under the conditions named above.

THOS. T. ECKERT, General Manager.

NORVIN GREEN, President.

NUMBER	WORDS BY	RECD BY	CHECK
2			

18 77

Received at ORANGE, N. J. 378 Feby 10 1889

Dated Newyork 10

To Thomas A. Edison

Llewellyn Park

Can you see me at my house any time Monday regarding new company am confined to the house

H Villard

Cable Address
"Edison, New York"

From the Laboratory
of
Thomas A. Edison

Orange, N.J. Feb 11th 1889

Telephone

Henry Villiard
Grille Building
New York

If I arrive there at
four or five o'clock will that
answer or ~~will this evening do~~

Thomas A. Edison -

or if this evening
will be convenient
please wire your
address.

Edd

Form No. 1.

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This is an UNREPEATED MESSAGE, and is delivered by request of the sender, under the conditions named above.

THOS. T. ECKERT, General Manager. NORVIN GREEN, President.

NUMBER	SENT BY	RECEIVED AT		CHECK
39	Un	5.	4 D H	Fonell Miller

Received at ORANGE, N. J. 4 48 Dated 18 1889

Dated New York 18

To Thomas A Edison

Difficulty with Morgan overcome

A Villard

EGEC

E WESTERN UNION TELEGRAPH COMPANY.

TRANSMITS and DELIVERS messages only on conditions limiting its liability, which have been assented to by the sender of the following message. assented against only by repeating a message back to the sending station for comparison, and the company will not hold itself liable for errors or delays delivery of Unrepeated Messages, beyond the amount of tolls paid thereon, nor in any case where the claim is not presented in writing within sixty days

UNREPEATED MESSAGE, and is delivered by request of the sender, under the conditions named above.

NORVIN GREEN, President.

ECKERT, General Manager.

NUMBER	SENT BY	RECEIVED AT		CHECK
39	Un	5.	8 D H	Fonell 4 3/5 Randolph

Received at ORANGE, N. J. 3 29 Dated 21 1889

Dated New York 21

To Thomas A Edison

Suggest monday noon my office for meeting Answer

A Villard.

EGEC

Mills Building.

New York, March 3 1889

Dear Mr. Ecroyd:

Please let me have such suggestions as you desire to make apropos of my memorandum regarding the Thomson-Houston Co. before next Thursday on which day Mr. Coffin will be here, I hope.

Yours very truly

H Villard

Form No. 1. EGEC

THE WESTERN UNION TELEGRAPH COMPANY.

This Company TRANSMITS and DELIVERS messages only on conditions limiting its liability, which have been assented to by the sender of the following message. To guard against mistakes or delays, the sender of a message should order it repeated; that is, telegraph back to the sending station for comparison, and the company will not hold itself liable for errors or delays in transmission or delivery of Unrepeated Messages, beyond the amount of tolls paid thereon, nor in any case where the claim is not presented in writing within sixty days after sending the message.

This is an UNREPEATED MESSAGE, and is delivered by request of the sender, under the conditions named above.

THOS. T. ECKERT, General Manager. NORVIN GREEN, President.

NUMBER	SENT BY	RECD BY	CHECK
35	W	av	17 paid

Received at 428 ORANGE, N. J. 3/15 1889

Dated New York 15

To J. H Edison Laby

Orange NJ

Villard Sent Drexels people who promise to close matters up quickly - Nothing more definite at the moment

Manuel

Edison Genl Electric Co

E. T. WATKINS, President.
J. W. DOANE, Vice-President.
F. S. GORTON, Secretary.

THE CHICAGO EDISON CO.
139-141 ADAMS STREET,

DIRECTORS:
A. F. BIESENBERGER, ROBT. T. LINCOLN,
JOHN B. GRAEF, J. W. DOANE,
E. T. WATKINS, F. S. GORTON,
E. L. BREWSTER, A. A. SPRAGUE,
R. C. CLOWRY, E. M. PHELPS,
BYRON L. SMITH.

CHICAGO, March 24th 1889

Aug. Nov 25 '88

My dear Edison

Should Villard fail & carry out his plans would it not be well for the Ships & Lights to be under our management? We did business before this scheme was thought of & the last delays in this matter has hurt business. I think as it now stands matters should take a Grand Centrifugal upon Stockholders pause. So the Cutting in Comp plant & Summer opening

Salutes and has been
gone away for years.
Have finally sent and found the
Patents at Small Cost.
Show to Example the Bell &
Edison & Gray Telephone Company
& Model Some money
Light & Ships Carbon used
a fair Capital or agreement
this fair amount Lease and the
Such Motor Have taken up 700 Lamps
lights so far this month Have
on & Calculated under Construction about 1500
Yours truly D. H. Gale

E.G.F.C.

Law Offices

120 Broadway (EQUITABLE BUILDING)

EATON & LEWIS

S.B.EATON.
EUGENE H.LEWIS

New York April 22nd. 1889

Thomas A. Edison, Esq.,
Dear Sir:

Re E. G. E. Co. Annexed hereto please find copy of a letter from Mr. Coster to me, dated April 19, 1889; also a copy of Mr. Villard's proposed reply thereto, addressed to me, dated April 22, 1889, prepared by me.

These letters close the preliminary details touching the formation of the Company. Mr. Spofford will give me a check at once for $15,000., to pay the State Tax, and I will file the Certificate of Incorporation probably tomorrow, if you approve.

Nothing now remains but to get your approval to the above two letters. Are they satisfactory to you? If so, kindly send me word immediately, and I will file the Certificate of Incorporation.

Very truly yours,

S. B. Eaton

[ENCLOSURE]

New York, April 19th, 1889.

Major S. B. Eaton,

Present.

My dear Major:

I am in receipt of yours of the 18th; and in answer, would say that while I am very clear in my opinion that a contract with Mr. Edison, in the form proposed, is not desirable for either party and, furthermore, that it is almost impossible to prepare any general contract with him, I do not propose to take the responsibility of deciding the matter, in view of the apparently reluctant consent given by Mr. Villard.

I have expressed my views to you; and am ready to discuss the matter with him any time that he is able to do so: but so far as I am concerned I must ask that it be allowed to lay over until that time.

The various papers you have prepared for the Edison General Electric Co., seem to me fully to cover all other objects that we have in view; and they are, in form, satisfactory to me.

As you will remember, the contract of guarantee by Mr. Villard is to be modified somewhat, in accordance with the conversation you and I had, yesterday; but I assume this paper can

[ENCLOSURE]

easily be got in satisfactory shape.

I understand, furthermore, that Mr. Herrick has accepted the offer of the Vice Presidency and General Management of the proposed Company; and I assume that a permanent Board of Directors will be constituted in a manner satisfactory to us.

These points being covered; and the matter of the Contract with Mr. Edison being satisfactorily disposed of, one way or another, I see no further objection to your going ahead.

Yours very truly,

C. H. Coster.

[ENCLOSURE]

Mills Building.

New York, April 22, 1889.

S.B. Eaton Esq.,
Present.

Dear Sir:

Replying to the letter of C.H. Coster Esq., under date of 19th. inst., to your good self, I would say:

1. It was never in my mind to hold Mr. Coster responsible for the non-conclusion of the proposed new contract between Mr. Edison and the Edison Light Company. It is true that I shrank at first from the responsibility of proceeding with the organization of the Edison General Electric Company without such a contract, but now I am also of the opinion that it is best to do without it.

2. I am willing to enter alone into the contract for $600,000. stock of the new Company to be used as agreed.

3. My understanding is distinct that Mr. Herrick shall be Vice-President of the new Company.

4. I will use my best endeavors to bring about the formation of a definite Board of Directors for the new Company satisfactory to Messrs. Drexel, Morgan & Co.

Truly yours,

(To be signed) Henry Villard

EGEC

Telegram.

Thomas A. Edison, New York, April 26, 1889.

General Co. Board met to-day. Organization completed and every contract approved and ordered executed. Will visit you to-morrow.

S. B. Eaton.

T. A. E.

E.L.T. & Gen'l. Elec. Co.

1889

OFFICE OF THE EDISON GENERAL ELECTRIC COMPANY,

44 Wall Street, New York City, April 26th, 1880.

To the Stockholders of the

Edison Electric Light Co.:

A corporation, called the Edison General Electric Company, has been formed to acquire the stocks of the Edison Electric Light Company and the three Edison Manufacturing Companies, to wit: The Edison Machine Works, Edison Lamp Company and Bergmann & Company, and for the other purposes set forth in its articles of incorporation. Arrangements are also being made to acquire stock in the Sprague Electric Railway and Motor Company should it be found desirable to do so.

The said General Company is organized under the Laws of the State of New York, with a capital of $12,000,000. Agreements have been signed for the purchase by the said Company of the capital stock of the said three Manufacturing Companies, payable partly in cash and partly in the stock of the new Company. The purchase price of the latter is equal to a capital sum on which the net earnings of the three Manufacturing Companies, as obtained from their books, show a net income of nearly 16 per centum during the year ending November 1, 1888.

In order to add greater security to the project, it is proposed that, for the present, dividends shall be payable only on a part of the stock received by the shareholders of the Light Company and the Manufacturing Interests in payment for their shares in the old Companies; dividends on the remainder to be postponed until such future time as the Board of Trustees of the new Company are of opinion that a dividend of at least 8 per centum has been earned on its entire stock.

The shares of stock in the new company on which the payment of dividends is to be postponed, as above stated, will be deposited by the General Company in trust with The Farmers Loan and Trust Company, of New York City. That company will issue Trust Certificates to represent the shares of stock thus deposited, and whenever the Board of Trustees of the General Company shall declare dividends on the entire capital, as above stated, the Trust Company will, on notice to all parties in interest, redeem the Trust Certificates by distributing to the holders thereof the shares of stock of the General Company held in trust.

To provide cash for the immediate needs of the new Company and for working capital, a syndicate has been formed to subscribe for stock in the new Company, and, in addition to the funds received therefrom, stock in the General Co. to the amount of $2,266,650, will remain unissued for the present, available for use in the future, according to the requirements of that Company.

Included in the syndicate is the General Electricity Company of Berlin, a company with sixteen million marks capital paid in, mainly devoted to the introduction of the Edison system of central station lighting on the continent of Europe. The largest stockholders in it are Messrs. Siemens & Halske, whose great establishment for the manufacture of every sort of electrical apparatus has a world-wide reputation as the largest and most successful of the kind in existence. The head of it is the eminent scientist and discoverer in the field of electricity, Dr. Werner Siemens. The identification of Messrs. Siemens & Halske with the new Company is expected insure to it continuous co-operation between Thomas A. Edison and Dr. Werner Siemens in the promotion of their art and in the regular exchange of laboratory and manufacturing experiences. This arrangement will give the new company a vast advantage not heretofore possessed. The General Company also expects to acquire licenses for valuable patents owned by Messrs. Siemens & Halske in this country.

The shareholders of the Edison Electric Light Company are now invited to participate in this combination, on the following basis: For each share of $100 of the Capital Stock of the Edison Electric Light Company, deposited with Messrs. Drexel, Morgan & Company, as hereinafter provided, the depositor is to receive $175 in the

stock of the Edison General Electric Company, carrying full rights as to dividends, and $91\frac{1}{2}$ in Trust Certificates representing stock of like amount in the said General Co., on which dividends are deferred as stated above. Thus each depositor will receive a total of $200\frac{5}{8}$ in stock and stock trust certificates of the General Company for each share of Light Co. stock deposited, making a total of $4,000,000 for the entire $1,500,000 capital stock of that Company, all of which is more fully set forth in an agreement, copies of which may be had on application at this office or at the office of Messrs. Drexel, Morgan & Co.

In order to avoid so far as desirable fractional shares of stock in the General Co. and fractional amounts in the Trust Certificates, the same may be equalized by payments in cash, in the discretion of Drexel, Morgan & Co., at the par or face value of the said shares or Trust Certificates, respectively.

If the foregoing project meets your approval, you are invited to deposit your certificates of stock with Messrs. Drexel, Morgan & Co., No. 23 Wall street, New York City. They will give you a Temporary Receipt therefor, and after a majority of the stock of the Light Co. and of the several Manufacturing Companies, referred to in said circular, is deposited, you will, upon the surrender of the said Receipt to them, receive from them the shares of the stock in the General Co., and the Trust Certificates mentioned above, to which you are entitled as above set forth and as more fully detailed in the agreement already referred to.

Respectfully,

EDISON GENERAL ELECTRIC COMPANY.

By JAMES B. WILLIAMS,
President.

EGEC

Ans. May 9 '89
Letter not signed by Mr S.

Law Offices

120 Broadway (EQUITABLE BUILDING)

EATON & LEWIS

S.B.EATON
EUGENE H. LEWIS

New York May 7th. 1889

T. A. Edison Esq.,
Dear Sir:

Re E. G. E. Co. Enclosed please find two letters relating to each of the Shops. They are to be signed by the entire Board of Trustees. That is to say, the two letters relating to the Lamp Co. are to be signed by all the Trustees of that Company. The two letters of the other two Shops are to be signed in like manner.

Will you kindly execute these six letters, if agreeable to you, and return them to me by mail without delay, and oblige,

Very truly yours,

S. B. Eaton

Dictated. EGGC

Mills Building,

New York, May 22, 1889

Dear Mr. Edison:

As I am going to the Pacific Coast next week, I am anxious to have a good long conference with you before my departure, and would suggest that you meet me at my office on Monday next at 11 A. M. Kindly let me know whether I may expect you.

You will have seen that we have been through a big fight, the result you know.

Yours truly,

H. Villard.

per.

Mills Building,

New York, May 23, 1889. 188

Thomas A. Edison, Esq.,

Orange, N.J.

Dear Sir:

Referring by way of explanation to the enclosed circular, I beg to notify you that the full amount of your participation in the Edison General Electric Syndicate, viz: $150,000., will be due and payable on June 4 next.

You will receive from me against this payment a temporary receipt exchangeable on or before June 15 for $187,500. of stock of the Edison General Electric Company.

Please make check payable to my order.

You are expected to hold the securities you will receive subject to the order of the Syndicate until January 1, 1890.

Yours truly,

H. Villard

H Co

THE EDISON ELECTRIC LIGHT CO., OF PHILADELPHIA.

L. D. BROWN, Pres't. B. K. JAMISON, Vice-Pres't. A. V. SLOAN, Sec'y and Treas.

TELEPHONE NO. 2122.

OFFICE, 927 CHESTNUT ST., PHILA. PAY BILLS AT 927 CHESTNUT STREET, 2D FLOOR.

ADDRESS COMMUNICATIONS CONCERNING SERVICES, LAMPS, WIRING, METERS, MOTORS, AND ALL MATERIALS, TO WM. D. MARKS, SUPERVISING ENGINEER AND GENERAL MANAGER, AT CENTRAL STATION, 908 AND 910 SANSOM STREET TELEPHONE NO. 820.

IF YOU WANT CHEAP POWER, USE A MOTOR.

THE EDISON CURRENT IS ABSOLUTELY FREE FROM DANGER TO LIFE.

SERVICES AND LAMPS FREE OF CHARGE. CURRENT SOLD BY METER. CIRCULARS ON APPLICATION.

May 28/89

PHILADELPHIA, May 27 1889

My dear Sir

After the Board's tongue lash- & his
withdrawal of Power of all my officiousness today it
seems impossible that I should say anything to
avail in defense - yet after thirteen years of peaceful
life in this City I hope to live in the softest harmony
with all my associates - despising the malicious use
of this & have never consciously thought to injure motives
of the keepers or Board of the Prisons of the Quarter Sessions
and I would not for worlds, where your Board to desire
to affirm no authority from Court given Power by
Court now Consent of the Mayor's Committee, only claim
ing that they should not have from that source
have no authority & also have no responsibility.

I regret [illegible] may [illegible] as a young
Man & in the old Institution, I pray to assure you
that I fully appreciate [illegible] Board's
Many good qualities and the good results of their
work to you. Should I ever have an opportu-
nity of [illegible] I shall not be slow to avail myself
of it. Yours [illegible]

Mr Thos. A. Reiter [illegible] Wm. D. Marks

EGEC

Rec'd June 7, 1889

23 Wall St. New York,
June 6, 1889.

Dear Sir.

We are now prepared to deliver securities of the EDISON GENERAL ELECTRIC COMPANY, upon surrender of our receipts for stock of the Edison Electric Light Company, and of the Edison Shops.

Very respectfully,

DREXEL, MORGAN & CO.

Lt, Co's - Philadelphia

THE EDISON ELECTRIC LIGHT CO.

16 & 18 BROAD STREET,

New York June 17th 1882 188

My Dear Marks anything
I do not see any thing except that
Vail's report except that Latham in
believe him mistaken in
every point except one or two minor
details

Thomas A. Edison, Esq.

Orange, N. J.

My dear Sir : -

It has occurred to me that the ungracious attitude and plain-spoken frankness forced upon me by the persistent advocation of Mr. Vail for an appointment in this Department may have impressed you as well as others with the feeling that I am actuated by personal motives.

It is important, if I have given rise to such an impression that you should know some of the reasons which have dictated my attitude in this matter.

I therefore enclose for your consideration Mr. Vail's report upon the Philadelphia station, and also my reply to it. I do not deem this reply as of much value in comparison with an inspection of the station, today in operation.

I would not trouble you with these documents, did I not wish to show you by them how little real engineering knowledge, how much insincerity, and the total lack of care as to statements made, are exhibited in this document.

Had I not fortunately been for many years a resident of Philadelphia, and in possession of the confidence of the gentlemen interested, an infinite amount of mischief and injury aggregating far more than $ 100,000 would have resulted to the Philadelphia Company, from such a wholesale denunciation and misrepresentation.

Mr. Insull's repeated insistence in this matter, that he has acted as your agent and spokesman makes me regard this as a grave affair.

May I ask, in justice to me, to refer to the following gentlemen :

Col. C. H. Banes, 20 - 21 Spring Garden Street, Philadelphia, Past President, Franklin Institute , Chairman Committee on Exhibitions, President Market Street National Bank;

Wm. P. Tatham, No. 1420 Walnut Street, Past President of Franklin Institute;

Sam'l B. Huey, Drexel Building, Philadelphia, Director in Edison Company;

Amos R. Little, Aldine Hotel, Philadelphia, Director in Edison Company, Director Penna. R. R. Co.

All of these gentlemen are of the highest commercial and social standing in the City of Philadelphia. They have known me in business and profession for many years, and have been very close to me. Some of them are capable of forming a just estimate of my engineering knowledge, and all of them know the results of my work in Philadelphia. Anything they are willing to say should carry very great weight.

THE EDISON ELECTRIC LIGHT CO.

EXECUTIVE OFFICES, 65 FIFTH AVENUE.

New York, 8 OCT. 188

It would seem as if the great intrinsic physical merit of your invention of the Incandescent Light is the cause of its survival of the mismanagement, untruthfulness, toadyism, chicanery, and actual theft which has followed it on all sides.

I would say that it is my earnest desire to make the name of the Edison General Electric Company a synonym for all that is thorough and honest in engineering and business management.

To do this I must insist upon unswerving integrity and justice, and thorough engineering knowledge on the part of all my subordinates.

This is my reason for desiring not to employ Mr. Vail, and feeling that I had better submit to greater labor at the outset of my work than risk being misled in matters requiring judgment, or misinformed in matters requiring just and prompt action.

I feel that I owe you an apology for asking you to read the enclosed documents, and also for asking you to read this letter, but, it is my desire to establish a clear and cordial understanding between us, and I hope that before many months have passed you will feel, without the need of explanation on my part, that every act is dictated solely by the desire to further the inter -

THE EDISON ELECTRIC LIGHT CO.

REMOVED TO 16 & 18 BROAD STREET, 11 WALL ST.

New York, 4 188

ests of this Company, in which you are so largely interested.

I am Very respectfully and truly yours

Wm D Marks

Engineer in Chief.

EGEC

THE EDISON GENERAL ELECTRIC CO.

EXECUTIVE OFFICES. ENGINEERING DEPARTMENT,

44 WALL STREET,

NEW YORK, July 3rd. 1889 188

Thomas A. Edison, Esq.

Orange, N. J.

Dear Sir : -

Herewith enclosed I hand you letter addressed to Mr. Bliss on receipt of your favor regarding arc lamps.

I desire to visit the Laboratory for the purpose of learning your method of determining the centre of gravity of feeders and mains.

I have hesitated to visit you, knowing the large number of visitors which are constantly at Orange, and yet I desire to be with you for the purpose of learning your views at regular intervals. I do not know your most convenient hours. Unless you express some decided preference for certain hours I shall be obliged to take my chances, and will endeavour to call at the Laboratory once a week.

I am,

Most truly yours,

Wm A Meadowcroft

Encl.

[ENCLOSURE]

Copy.

New York, July 2nd.1889

Mr. Geo. H. Bliss,

225 Dearborn Street.

Chicago, Ills.

Dear Sir : -

I have your esteemed favor of June 20th. After a consultation with Mr. Edison, we prefer to let the matter rest at present.

Very truly yours,

Signed. Wm. D. Marks,

Engineer in Chief.

MEMORANDUM.

FROM ENGINEER-IN-CHIEF.

EDISON GENERAL ELECTRIC CO.,

44 WALL ST.

TO

Mr. T. A. Edison,

New York July 15th, 1882~~88~~ .

Orange, N. J.

Dear Sir : -

Enclosed herewith I hand you a communication to Mr. J. H. Herrick, Vice President, which I trust will meet with your approval. I have in it made such a proposition as seemed to me proper with a view to the economical working of this Company's forces.

I am, Very respectfully & truly yours

Wm. R. Mackie.

Engineer in Chief.

[ENCLOSURE]

July 15th.1889

Mr. J. H. Herrick, V. P.

Edison General Electric Co.

My dear Sir : -

Referring to our verbal interview on Friday last, in which you asked me to relinquish in toto to Mr. Leonard, General Manager, United Edison Mfg. Company, the engineering and estimating work of isolated plants and of cash central stations, I would say in reply, that it will be a welcome relief to me to transfer this business to Mr. Leonard, as you desire, provided, that in any work of sufficient magnitude to demand specifications, drawings, and blue prints or the services of a professional engineer, this work is to be done by the organized corps of engineers and draughtsmen now employed by this Company, under my directions, and that I retain the right of inspection and thorough investigation at all times and of calling a halt in cases that for any reason I deem the work or manner of conducting it prejudicial to the interest of this Company, either directly or by reflex action on its larger undertakings.

If upon consultation with Messrs Villard and Herrick, any changes are deemed desirable my instructions are to be carried

[ENCLOSURE]

out.

I mean by this to offer to Mr. Leonard the largest liberty possible in consonance with my loyal services to this Company as Engineer in Chief and Technical Assistant to the Pres't.

Up to the present date, for economical reasons, I have kept the unemployed members of my own staff busy on neglected estimates of isolated work, which are now brought up to date.

If this middle ground is satisfactory to you, I will as you request today transfer to Mr. Leonard all the isolated work and give a summer-vacation to such employées of my Department as can be spared until central station work demands their presenxe here. I would like to have the vacation business done with.

If however, my suggestions which go as far as my agreement with Mr. Edison and Mr. Villard, will permit - do not meet with your approval, I shall be pleased to abide by the written decision of Messrs. Villard and Edison, to whom I am directly responsible, by my agreement, of February 25th. 1889

I am, Most truly yours

Wm. D. Mark

Engineer in Chief & Technical Assistant to the Pres't.

The Governor
Washington St. Brooklyn
July 16th 1849

Mydear Sir—

I presume a
Man hirs out the convo-
lutions of his brain—Mr
Tillard today advised me
that you were removed
by my influence to my ar-
rangement with Mr Tillard
and yourself— Considerit
for your consideration—

My error, if I have committed
one, is due to the fact that

terms of our understanding — But with Mr. Bell
for the Company, and Mr. Latta — Both of
of you as the Trustees thereof you owe it to
me — Others, in the best good faith relying
upon his personal relations with Edison
but — However, I am in a few months finish
work elsewhere, & after all it will all come
to the same thing, in a very many years
& is not worth making a fuss over. I am
in Mr. Edison's Mark that I gave Mr. Howard

I took it for granted that you
both were acting for the
Company and accepted
on the basis of the terms of
our agreement, my present
position — Perhaps me I can
be a good subordinate to
an Edison or Tilland but
no amount of money can
make me willing to be sub-
ordinated to the average
man — Setting the struggle too
unequal I am evidently
very much in the minority
[illegible] at present, Still it does
be best to let me go under the

C o p y.

Orange, N. J. July 20, 1889.

William D. Marks, Esq.,

W e s t p o r t , Essex Co., N. Y.

My Dear Sir:-

I have your favor of July 16th.

At the time the arrangement was made with you to become Engineer in Chief of our new Company, I had no idea that you expected to be held alone responsible to myself and Mr. Villard. I am not an official of the Edison General Company, and in any event every officer of a Company must, of necessity, be held accountable to the Company itself through its proper representatives. I understand that your objection is to working under Mr. Herrick's direction. Mr. Herrick is the Vice-President of the General Company. The Vice-President takes the position of the President when he is not there, and as Mr. Villard does not pretend to attend to the details of the General Edison Co's business, it necessarily follows that all officials of the Company have to report to the Vice-President, Mr. Herrick. If you have misunderstood the nature of the position that you would occupy, I am indeed sorry.

With reference to the suggestion you make as to your resigning, this is a matter that so far as I am personally concerned, I

prefer to leave entirely to yourself. However much I would like to see you remain an officer of The Edison General Electric Company, I would not for one moment be inclined to urge you to stay against your own wishes.

Yours very truly,

(Signed) THOMAS A. EDISON.

Dictated

Mills Building,

New York, July 23, 1889.

Dear Mr. Edison:

I enclose copy of a letter from Professor Marks which explains itself.

Yours truly,

H. Villard.

per

[ENCLOSURE]

(9)

THE EDISON GENERAL ELECTRIC CO.

Executive Offices. Engineering Department.

44 Wall Street,

N e w Y o r k, July 22nd, 1889.

Mr. Henry Villard, President,

Edison General Electric Co.

My dear Sir:-

I mean no discourtesy or disrespect in what I shall say, but only to place before you a straight-forward statement of my understanding of our agreement concerning my connection with this Company,- copies of which I herewith enclose.

All of my actions in leaving Philadelphia and accepting the position of Engineer-in-Chief here were based upon my agreement with Messrs. Villard and Edison, which I surely had reason to believe would be sustained by the Edison General Electric Company, and in feelingthat they were in honor bound to see it carried out.

No inducements whatever would have made me willing to subordinate myself to the then existing officials of the New York Edison Companies, or to risk becoming the subordinate to officials unknown to me.

It was agreed that I should only be responsible to Messrs. Edison and Villard, of the Officers of this Company.

I referred to this agreement in accepting the position of Engineer in Chief.

I was advised that all of the Edison Companies were to

[ENCLOSURE]

be absorbed by one General Company, of which I was to be Engineer-in-Chief.

I did not accept this position for pecuniary reasons for at the end of the year I should have saved more money by remaining in Philadelphia, but, I did accept it believing that a broader field of engineering was offered to me, and that I might share in the creation of a great organization with honor to myself in that field which I have chosen for my life's work.

Acting in perfectly good faith, I provided for filling the positions which I should have to vacate and resigned to undertake my duties in New York.

I find first, that the engineering supervision of the various factories is withdrawn with Mr. Edison's approval. To this I did not take formal exception desiring not to appear captious.

Next, I am told in most positive terms by the Vice-Prest. of the Company that in the arrangement and subdivision of engineering matters, I am subject wholly to his commands, and further told, that I have no control or supervision of isolated work or cash central stations, which are assigned to others.

Against all of these actions I now protest, as contrary to my agreement with the Edison General Electric Company through Messrs. Villard and Edison, as I have at no time been informed or believed that my arrangement with them was other than an arrangement which they would feel in honor bound as influential members of the Company to have approved and carried out.

[ENCLOSURE]

I have referred to this agreement which certainly is not underhand in its nature, both in my acceptance of the position of Engineer in Chief, and in my protest against the action of the Officers of this Company, but have not shown it presuming that it would more properly reach those affected by it from our President than from myself.

It is not a light thing to persuade a man to leave honorable and lucrative positions, and to leave a community in which he has, by many years of honest toil, gained standing, and then to fail to keep promises made to get him to enter your service.

I desire particularly to say that I am aware that these actions against which I protest were taken during your absence, and without your approval, but, if allowed to stand, the practical results to me are the same as if you were responsible for them.

Sincerely appealing to your sense of justice and of right humanity, I am,

Very respectfully and truly yours,

(signed:) WM. D. MARKS.

Engineer in Chief & Technical Assistant to the Prest

[ENCLOSURE]

909 Sansom Street,

Philadelphia, Feby. 26th, 1889.

Mr. Henry Villard, Prest.,

Edison General Electric Co.

Dear Sir:-

Referring to the verbal interview of yesterday, at which you and Mr. Edison were present, I would say that as I apprehend it, you offer to me the position of Engineer in Chief of the Edison General Electric Company, at a salary of $10,000, Ten Thousand Dollars per year, also if my connection with the Company is not required for more than one year or for less time to pay me $5,000, and accept my resignation. My official connection to begin April 1st, 1889. I am to be held responsible to Mr. Edison and to yourself only of the Officers of the Company, and am to conduct the engineering work and business appertaining to it as I have heretofore for the Edison Co. of Phila. It is also understood that I am to have sufficient time and opportunity to honorably complete my work for the Phila. Co.

Yours truly,

Wm. D. Marks.

[ENCLOSURE]

(Dictated)

Mills Building,

New York, February 27, 1889.

Prof. Wm. D. Marks,

Philadelphia, Pa.

Dear Sir:-

I have your favor of the 26th instant. You address me as President of the Edison General Electric Company, but, as I explained to you verbally, I do not as yet hold that office.

Your letter gives a correct statement of the agreement arrived at between yourself and Mr. Edison and myself, and I take pleasure in confirming it, with the reservation, however, that your formal engagement must, of course, be ratified by the Board of the Edison General Electric Co.

Yours truly,

H. Villard.

909 Sansom Street, Phila., Pa.

May 15th, 1889.

Mr. Henry Villard,

New York.

My dear Sir:

In accordance with my promise of the 13th current, I have communicated with my Board of Directors, who are willing to leave the time of departure to my own judgment, only stipulating that I shall visit them once or twice a week or in emergencies,

[ENCLOSURE]

and shall remain Consulting Engineer for one year. Referring to my letter of February 26th, and your own of February 27th, 1889, I shall be pleased to assume the position of Engineer in Chief, in accordance with the terms of those letters, as soon as you require my services. I shall probably be somewhat irregular in my attention to your work until June 1st, after which I trust I shall be able to give the major part of my time to New York, and settle down to regular routine.

I enclose for your information my report of May 13th, and await your further instructions.

I am,

very truly yours,

Wm. D. Marks.

EGEC

MEMORANDUM.

FROM ENGINEER-IN-CHIEF.

EDISON GENERAL ELECTRIC CO.,

44 WALL ST.

New York July 22 1889

To Mr Thos A. Edison
Orange N. Jersey

My dear Sir — I know you for a very wise man and a very generous man but sometimes you are misinformed — My position is just this I am willing to do any engineering required by the Officers of this Company but I am not willing to have it done outside of my control & supervision — There is no question of authority outside of the Engineering work of this Company so far as I am concerned — Enclosed letter of even date to Mr Pollard Post Yours very truly Wm D Marks Engr in Chief.

THE EDISON ELECTRIC LIGHT CO., OF PHILADELPHIA.

TELEPHONE No. 2128.

L. D. BROWN, Pres't. B. K. JAMISON, Vice-Pres't. A. V. SLOAN, Sec'y and Treas.

OFFICE, 927 CHESTNUT ST., PHILA. PAY BILLS AT 927 CHESTNUT STREET, 2d FLOOR.

ADDRESS COMMUNICATIONS CONCERNING SERVICES, LAMPS, WIRING, METERS, MOTORS, AND ALL MATERIALS, TO WM. D. MARKS, SUPERVISING ENGINEER AND GENERAL MANAGER, AT CENTRAL STATION, 108 AND 110 SANSOM STREET. TELEPHONE No. 820.

IF YOU WANT CHEAP POWER, USE A MOTOR.

THE EDISON CURRENT IS ABSOLUTELY FREE FROM DANGER TO LIFE.

SERVICES AND LAMPS FREE OF CHARGE. CURRENT SOLD BY METER. CIRCULARS ON APPLICATION.

PHILADELPHIA, July 23 1889

Mr Thos A Edison Orange New Jersey.

My dear Sir Mr Villard sent for me & had a long verbal interview with me today & while he was very courteous said nothing looking towards a change in the present disrupted condition of the Engineering department & so the interview was closed by my saying that I would leave the whole matter in the hands of Mr Edison & himself and abide by your decision with a strong hope & confidence for leaving on my part. To Mr Villard's suggestion that under these conditions I would neglect my work I answered – I can always do my duty.

Mr Villard also mentioned that I was accused of having the big head. I may be pardoned for saying, with regret that I feel that nature has not so endowed me as to make me look to mine the achievements of an Edison or Villard but that I have not as yet met any one else connected with the Edison System concerning whom I should feel called upon to make a similar admission.

Dear Mr Edison Yours

Wm D Marks

2940 July 9

Henry Villard Esq
Mills Building

My dear Sir,

Since I saw you this morning I have seen Mr Edison and referring to your letter to him of yesterday, enclosing correspondence from Prof. Marks) he requested me to convey the following message to you "Prof. Marks "is a very valuable man as "an Engineer but his peculiarities "reduce his value very much "and render the consultation

"I think we would do better to get another man"

Yours truly

Samuel Burris

EGEC

THE EDISON GENERAL ELECTRIC CO.

EXECUTIVE OFFICES. ENGINEERING DEPARTMENT,

44 WALL STREET,

NEW YORK, July 29th. 1889 188

Mr. Thomas A. Edison,

Orange, N. J.

Dear Sir : -

In response to your request, per Mr. Tate, I make the following report to you on the relative cost of 1,000 H. P. in boilers, engines, dynamos, pumps, steam piping, heaters, injectors, tanks, water piping, blast piping, blowers, chimney, etc.

I find in round figures that the cost of these exclusive of electrical connections aggregates in the neighborhood of $ 100.- a horse power, or $ 100,000. - for 1000 H. P.

I find also that the cost of a storage battery of plain lead plate $\frac{1}{8}$" thick and capable of working without repairs for three years under such abuse as over-charging, complete short circuiting, and the various accidents that befall a battery in practical use, requires about 400 pounds of lead, which, as the ruling price of lead is 5 cents per pound, we can estimate in its manufactured state at 7½ cents per pound, or $ 30. - per cell having a surface of 120 odd square feet, a discharging capacity of 420 ampère hours, and reckoning the E. M. F. at 1.85 volts, a capacity of 777 watt hours or 1.04 horse power hour; 1,000 of these cells would in round figures furnish 1,000 H. P. hours, and would cost

for lead $ 30. - for box and acid $ 5. - .....total $ 35. - each. But, if it was intended that this storage station should supply 1,000 horse power or 12,000 lamps for 4 hours, the total cost would be 4 x 35,000.....$ 140,000. -

This is assuming that but 3½ ampère hours can be gotten from a square foot, which is a very low estimate.

It would be necessary to form this battery by some of the quick alkaline methods.

B. de Montaud, Civil Engineer, No. 78 Rue d'Allemagne, Paris, has done a good deal of work in its solution, and his work has furnished me with the basis of my suggestions to you.

Should it prove that there will be little or no repairs for three years on these lead batteries, the difference in cost $ 40,000. - between running boilers, engines and dynamos, and the attendance required by them, would be compensated to a considerable extent by the low cost for attendance and repairs of a storage station.

Should you desire me to go into this matter more in detail I shall be pleased to give it a very careful study, and furnish you with designs on the large scale which I have suggested.

Yours very truly,

Wm. H. Marks

Engineer-in-Chief.

July 30th. 1889

Mr. Henry Villard, President,

Edison General Electric Co.

My dear Sir : -

The near approach of Mr. Edison's departure for Europe renders it necessary that I should remind you of your promise last Tuesday July 23rd. to " let me hear from you within a day or two. "

Desiring not to in any way jeopardize the interests of this Company I have without regard to our own understanding heretofore acceded to the wishes of your Vice President until such time as Mr. Edison and yourself could definitely arrange matters.

However much to be deplored the present status of affairs may be, I can not blame myself, nor could any one else blame me for believing that the promises of Messrs. Edison and Villard reduced to writing, would be kept.

The proper time to have modified our arrangements was during our negotiations when at your solicitation I visited you in New York, not now that I have left my positions in Philadelphia after having found proper substitutes and had these positions filled by others.

I noted during our interview of last Tuesday that you

quoted statements made by others around you as to my conduct in office as subversive of organization and trenching on the rights of others. All of this gossip if brought in definite form I am prepared to show is a mis-statement.

May I request you, in forming your judgment, and in justice to me, as I have already requested Mr. Edison; to refer to the following gentlemen of Philadelphia where I have resided for the last thirteen years. Their names are synonyms for all that is honest and able :

Mr. Sam'l B. Huey, Drexel Building,

Mr. Amos R. Little, Aldine Hotel,

Mr. Wm. P. Tatham, 1420 Walnut Street,

Mr. Chas. H. Banes, Market Street National Bank,.

These are all gentlemen accustomed to large affairs and of the foremost commercial and social standing in Philadelphia. The have been very close to me in business matters and anything they are willing to say should carry great weight.

The money you offered me was but incidentally a means of support. The broader field of engineering was the real inducement which made me willing to leave my home and enter your service.

There never has been any question of authority outside of the engineering work, nor will be, whatever our understanding may be, but I am not willing to have the engineering work of this Company removed from my supervision and control. If after proper investigation amongst those who know me best, you feel that I will not exercise this control wisely and to the great advantage of this Company you have in your power my immediate removal under the terms of our agreement but pray do not begin by so crippling me by allowing the interference of others in the Engineering Department, as to render impossible successful work on my part, and that this has already been done is my fixed opinion, based on years of actual experience partly in electrical engineering; since in 1884 I assumed the position of Manager for the Franklin Institute of its Electrical Exhibition.

I deplore the necessity which has forced me to take this position, it has caused me infinite regrets, and if you decide to call for my resignation will subject me to very grave injury, but, honestly I take it with a thorough and practical knowledge of my work and the business connected with it.

To go forward as matters are now arranged I know will result alike in injury to the interests of this Company, and to my own reputation as an Engineer and man of business.

I have tried to make myself clear, I have never attributed to Mr. Edison or yourself other act than forgetfulness of promises made. I am willing to do the engineering required by any officer of this Company but this engineering should be subject to my supervision and control.

I earnestly beg of Mr. Edison and of yourself a definite decision in accordance with our agreement.

I am Very respectfully and truly yours,

Wm Williams

Engineer-in-Chief.

Meter

THE EDISON GENERAL ELECTRIC CO.

EXECUTIVE OFFICES. ENGINEERING DEPARTMENT,

44 WALL STREET,

NEW YORK, August 8th. 1889

Mr. A. E. Kennelly,

care of Edison's Laboratory,

Orange, N. J.

Dear Sir : -

I send you herewith blue prints from meter drawings with an apology for their appearance, as the draughting room is not at present up to such a standard as I could wish.

Mr. Edison spoke to me several times, anterior to his departure, regarding a method which I think is mechanical of making determinations for conductors, and requested me to visit the Laboratory and learn it. At such time as you may find it convenient, I shall be glad to call for this purpose.

In the matter of meters the data regarding the number of ampères and time of use does not seem from what I can learn through Mr. Jenks and others to be very clear, possibly there may be some general law which can be reached, governing the capacity of these meters. At any rate I should be very glad to have your report, and if you can grant me a sufficiently lengthy interview to discuss this matter in all of its aspects.

Up to the time of getting out the drawings, I took no interest in it, as I presumed that the Standardizing Committee had reached definite conclusions, and that no further discussion was necessary.

Yours very truly,

Wm. D. Marks

Engineer-in-Chief.

[FROM ARNOLD MARCUS?]

EGEC

Edison Gen. Electric Co.

EDISON GENERAL ELECTRIC COMPANY.

Mills Building,

N e w Y o r k, September 5, 1889.

Thomas A. Edison, Esq.,

Orange, N.J.

Dear Sir:

I beg to inform you that, at a meeting of the Executive Committee of the Board of Directors of this Company held on the 29th ult., you have been appointed a member of the Technical Committee.

I am, dear Sir,

Yours very truly,

Secretary.

EOEC

THE EDISON GENERAL ELECTRIC CO.

EXECUTIVE OFFICES. ENGINEERING DEPARTMENT,

44 WALL STREET,

NEW YORK, September 10, 1889

Mr. Chas. Batchelor,

care of Edison's Laboratory,

Orange, N. J.

Dear Sir :-

Your favor of the 4th inst. received on my arrival from Winnipeg.

In the matter of drawings for street cars, Mr. Islin of the Gibson Storage Battery Co. promised me a set he had before I left. I have written him about it besides requesting builders of freight cars to forward prints to us; consequently will be able in a short time to either send originals or copies.

On the street car business I have struck a small bug, but will have it all in shape to show you what I have done by Friday say, or any other day that might suit you.

By the way, what speed would you prefer for motor; about 1500 would suit my sketches.

Yours very truly,

J. C. Shaw

E G E C

THE EDISON GENERAL ELECTRIC CO.

EXECUTIVE OFFICES. ENGINEERING DEPARTMENT,

44 WALL STREET,

NEW YORK, Sept. 21st. 1889.

Mr. Charles Batchelor,

care of T. A. Edison's Laboratory,

O r a n g e, N. J.

My dear Mr. Batchelor : -

I received from Mr. Iselin of the Gibson Electric Company this morning the enclosed blue print of street car and letter from the J. G. Brill Co.

I have promised Mr. Iselin to return this blue print as soon as you can make a tracing of it.

Trusting this will show the desired dimensions, I remain

Very truly yours,

J. C. Henderson

per WBS

Enclosures.

[ENCLOSURE]

Philadelphia Sept. 20th 9

Gibson Electric Co.,

Henry S. Iselin Esq.,

74 Cortlandt St. N. Y.

Dear Sir,

We have your favor asking for blue print of the Broadway & 7th Ave. cars, we mail you one to-day showing the same except the Broadway cars had a step at each end on the platforms, otherwise this print is exactly the same; generally we do not send a print complete like this one, but as it is for your own use, we break our rule; we also send you a blue print showing the way we arrange our storage battery tray in such cars, this can be got in the Broadway cars, and can be made the height shown in the white tracing which is a full end section of their seat; you would, of course have to cut out the seat leg, and put in a panel as we have shown it, the total length of this tray could be 15¾" ; in ordering such cars as these, the car would have to be raised about 3¾" to 5" and the platform dropped so that your wheels would not come through the floor; your engineer can of course work that out, as we have given him all particulars to work from.

Yours truly

J. G. Brill Co.

per E.

Sprague

EDISON GENERAL ELECTRIC CO.

44 WALL STREET,

New York, October 16, 1889. 18

Thomas A. Edison, Esq.,

Orange, N.J.

Oct 18 89

My Dear Sir:

The Sprague Electric Railway & Motor Co. are having considerable trouble with the armatures of their Street Car Motors. They make strong complaint of the workmanship on the armatures, and state that the trouble could be obviated if proper attention were given to the work by The Edison Machine Works.

I have requested our Chief Constructing Engineer, Mr.J.C. Henderson, to look into this matter so far as the workmanship is concerned. I understand, however, that the trouble may possibly arise from original faults in invention and design, and if I may so far intrude upon your valuable time I would esteem it a favor if you would give us in writing your opinion on this point.

As this is a matter of considerable moment to us, I am sure that you will appreciate the importance of an asthorough investigation as an early reply to my inquiry may permit of. Any expense that you may be put to in connection with this matter please charge to this Company.

This letter will be presented by our Chief Constructing Engineer, Mr.J.C.Henderson, whom I have instructed to do whatever

T.A.E.No.2.

you may direct in connection with the matter.

Yours very truly,

Henry Villard

Lamps

A. MARCUS,
P. O. BOX 3264.

Mills Building,

(Dictated)

NEW YORK, Nov. 6, 1889. 18

Ans. Nov. 8/89

Thomas A. Edison, Esq.,

Orange, N.J.

Dear Sir:

I beg to hand you enclosed copy of sundry papers received from Mr. Upton, in relation to the Pieper Lamp, which was turned over to him for examination. While I do not undertake to judge of the merits of any invention, I should say that in view of the fact that incandescent lamps without exhaust of air might be an important subject for the Company, I think Mr. Upton's dictum somewhat quick. Will you kindly look over the report and let me know your views in relation to it?

Mr. Roman has personally expressed his desire of making your acquaintance and I would thank you if you would give him an opportunity to do so. He telephoned to you to-day for paying a visit to your laboratory and heard that you could neither see him to-morrow nor the day after. Please let me know when it will be convenient for you to do so, and I will take pleasure in com-

municating with him.

Yours very truly,

[ENCLOSURE]

(COPY)

EDISON LAMP CO.,

Harrison, N. J., October 20th, 1880.

Arnold Marcus, Esq.,

Mills Building, Broad St.,

New York, N.Y.

Dear Sir:--

The following extract is from a letter I received from Mr. P. S. Dyer, Antwerp, Belg., in regard to the Peipor Semi-incandescent lamp. I thought it would be of interest to you:

"Regarding the Pioper Semi-Incandescent lamp, Henri Pioper, "Jr., the inventor of this lamp, writes me, and says that they "have not yet decided upon the steps to take, and cannot at pres-"ent give me any particulars as to what the lamp does, &c. The "Paris Company say that they have heard of it, but cannot furnish "any data, as they cannot get any. I asked Hammer to write you "direct all he could find out about it. H. Pioper has promised to "give full information when he can. It seems to be kept quiet "at present."

Yours very truly,

F. R. Upton

Treasurer.

[ENCLOSURE]

(COPY)

EDISON LAMP CO.,

Harrison, N.J., November 1,1880.

A. Marcus, Esq.,

Mills Building, Broad St.,

New York, N.Y.

Dear Sir:--

Mr. Roman stated to me that the Pieper Lamp had taken the Grand Prize at the Paris Exposition. Not having seen this fact mentioned in any of the electrical papers, I cabled Mr. Hammer as follows: "What prize did Pieper lamp take", to which he replied as follows: "Pieper exhibit gold medal."

This indicated that the Pieper Exhibit took a prize which was a Gold Medal and says nothing regarding the Pieper lamp which was part of the exhibit. This is in accordance with Mr. Hammer's letter which only spoke of the lamps as a matter that was not creating great comment in the Exposition.

Yours truly,

Francis R. Upton,

General Manager.

[ENCLOSURE]

(COPY)

Harrison, N.J., November 4, 1880.

A. Marcus, Secty.

Dear Sir:---

Regarding Pieper lamps brought here for test by Mr. Roman.

The lamps with the carbons submitted are not, in my judgment, desirable for use by Edison Companies.

Yours truly,

F r a n c i s R. U p t o n.

[ENCLOSURE]

1

(COPY)

EDISON LAMP CO.,

Harrison, N.J., November 5, 1889.

A. Marcus, Esq.,

Mills Building, Broad St.,

New York, N.Y.

Dear Sir:

With this is copy of our Mr. J.W. Howell's Report upon the Pieper Arc-Incandescent Contact lamp. In this report may be found that the lamp burned in series from 100 volt incandescent circuit , is apt to arc and go out from accidents happening to the carbons. This fault condemns the lamp in my opinion for use from Edison stations.

The economy of the lamp is not sufficiently great to make it a very active competitor to incandescent lamps of high economy, as candle for candle it takes about the same power when the spherical measurements are taken and the light has passed through the Opal globe upon the lamp.

The lamp is very simple in construction, and if it were not for the difficulty mentioned, which appears to be inherent to its form, might be of service in meeting competition from Arc lamps.

The consumption of carbon being so great that a carbon lasts only 2 1/2 hours, makes the lamp very expensive and troublesome to run.

Yours very truly,

F. R. U p t o n,

General Manager.

[ENCLOSURE]

I

PIEPER ARC INCANDESCENT OR CONTACT LAMP.

First Day :-

One lamp was hung alongside a 100 C.P. Edison lamp. In order to make the contact lamp appear as well as the 100 C.P. lamp, it was necessary to supply 35 amperes using 3 volts. Under these conditions the lamp burned nicely for 2 1/2 hours using up one carbon pencil. In the afternoon a new carbon was put in, but the lamp did not burn well, was unsteady, had a constant flicker, and after burning half an hour an arc formed between a copper rod and the carbon which was so vicious that we shut off the current. This arc ate away one side of the carbon for 1/4 inch and fused the end of the copper rod. We filed the coppers to make them the right shape and then they burned nicely again till carbon was used up, about 2 hours more. This first day's test was made merely to acquaint ourselves with the lamp, and it was roughly compared in its lighting effects in a room with a 100 C.P. lamp. In order to make it appear equal to a 100 C.P. lamp, with the shade on the lamp, it was necessary to use 35 amperes.

Second Day :-

The same lamp was placed in the photometer with the shade removed, so we measured the naked light. At Mr. Roman's request, 30 amperes were used. A second lamp was placed in series with the one being measured. After burning half an hour, the lamp formed an arc between the carbon and copper burning the carbon and copper

[ENCLOSURE]

and making it necessary to shut off the current and file the copper points. Half an hour later the second lamp formed a similar arc with like results. The lamp in the photometer was allowed to burn the carbon till it was stopped by the weight reaching the end of its travel. Instead of burning off and opening the circuit as it should do, an arc formed which fused the copper points together which closed the circuit and made it necessary to file the points before the lamp could be used again. After dinner the copper points of both lamps were carefully filed and adjusted, and new carbons were put in both lamps. The lamps were burned an hour and both burned well. Photometric measurements were taken every 15 in the horizontal plane and by a mirror a comparison was made between the light given in a horizontal plane and the light given downwards by the lamp, the lamp having a reflector above the light. In the horizontal plane the lamp gave 240 candles in the best position and 10 Candles in the shadow of the copper rods, the average candle power was 114, being 140 in one test and 139 in another. The light given downwards was measured by reflection as the lamp can only be operated in one position as it feeds by gravity. This measurement gave 127.5 candles. With 30 amperes the lamp used 7 1/2 volts on the average, varying between 7 1/4 and 7 3/4, the light varied with the volts, as it should.

With 30 amperes, 7 1/2 volts and 144 candles we have an efficiency of 1.56 watts per candle.

The Opal shade which was on the lamp reduces the light given by the naked lamp 50%.

[ENCLOSURE]

When burning it is necessary to keep the lamps steady as any jar may shake the carbons from the copper points and cause an arc which will burn the carbon and copper points. We could not handle the lamp when burning, or measure it in any position other than vertical for this reason.

During the above test for exactly one hour at 30 amperes the carbon of one lamp burned away 4 3/16 inches and the carbon of the other lamp 4 7/16 inches. The carbons have an effective length of 11 1/2 inches making it necessary to replace the carbons every 2 1/2 hours.

The following tables show the Photometric measurements:

First Test:		Second Test.	
Angle.	Candles.	Angle	Candles
180	188	180	245
195	206	195	195
210	178	210	188
225	150	225	125
240	136	240	85
255	128	255	56
270	68	270	55
285	54	285	75
300	15	300	178
315	10	315	190
330	86	330	205
345	98	345	185
360	196		
165	185		
150	176		
135	176		
120	165		
105	130		
90	88		
75	85		
60	108		
45	165		
30	205		
15	243		

(signed:) John W. Howell.

Harrison, N.J., November 5th, 1889.

J EGEC e 8 7

CABLE ADDRESS:
"VILLARD, NEWYORK."

Ans. Dec. 23/89

Mills Building,

New York, December 18, 1889. 18

RECEIVED
DEC 18 1889

Ans'd 188

Thomas A. Edison, Esq.,

Orange, N.J.

Dear Sir:

Referring to my letter of May 28 of this year, calling for the payment of your participation in the Edison General Electric Syndicate, and stating to you that you are expected to hold the securities then received subject to the order of the Syndicate until January 1, 1890, I beg to inform you that, in the interest of all parties concerned, the Syndicate has extended until April 1, 1890, the time of so holding the said securities subject to its order.

Yours truly,

H Villard

Copy to Comptr

Thos. A. Edison

Please send word to my office tomorrow morning as early as you can whether you can make an appointment to meet Prof. Marks and myself next Saturday forenoon at my house or such other place as will suit you

Truly Yours

Henry Villard

Pres. H Villard

Secy. & Treasurer } Nat MacClement / Nat Messing / Douglas Campbell / Edward Johnson

Vice Pres. & gen. manager shops — Insull

Chief Engineer — Marks

Asst " — Vail

Constructing " — Henderson

Isolated Engineer & Supt Construction, under Chief Engr — Phillips

Charge Isolated Co — Management — under Vice pres. — Brunnock

General Supt Outside franchise etc, — Hill

Shop managers as they are — Mines

Bergmann, Insull to attend to that

problem until gets proper man for manager

Technical Ex Com

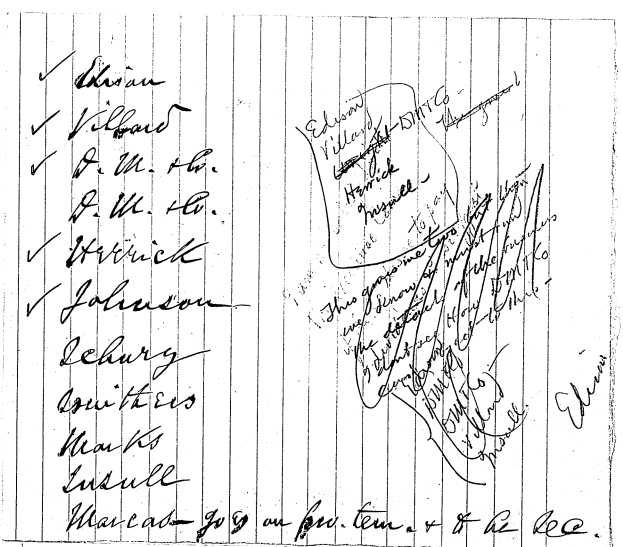
Insull

Edison

Marks

Henderson

This Committee not only decides as to plans specifications etc of any new station or scheme, but also to report to the finance Com their ideas as to the Commercial aspects of the schemes,


✓ Edwin
✓ Villard
✓ D. M. Pk.
D. M. Pk.
✓ Hetrick
✓ Johnson
Doherty
Smithers
Marks
Insull
Marcada
Edwin
Villard
Hetrick
Insull
Edwin

1889. Electric Light - Edison Lamp Company (D-89-39)

This folder contains correspondence, reports, and other documents relating to the business of the Edison Lamp Co. Most of the letters are by Francis R. Upton, general manager and treasurer of the company. Included are letters regarding company finances, foreign business affairs, and the fiber searches of Charles F. Hanington and James Ricalton.

Approximately 40 percent of the documents have been filmed. The following categories of documents have not been filmed: letters of transmittal; meeting announcements; routine correspondence regarding orders; bills and receipts.

THOMAS A. EDISON, PRESIDENT.

FRANCIS R. UPTON, GEN'L MG'R AND TREAS.

EDISON LAMP CO.,

Harrison, N. J., ~~January 2nd,~~ 188 9

Samuel Insull, Esq.,

19 Dey Street, New York, N.Y.

Dear Sir:-

I want to speak to you regarding this matter, and send you the letter of Leonard & Izard to remind you of it.

I received your telephone message and will be at your office before twelve, noon. I expect to be there at ten thirty in the morning to meet Mr. Hammer.

Yours truly,

Francis R. Upton

[ENCLOSURE]

Leonard & Izard

GENERAL AGENTS THE EDISON UNITED MFG. CO.
THE CHICAGO EDISON CO.
SPECIAL AGENTS AND LICENSED CONSTRUCTORS FOR THE EDISON ELECTRIC LIGHT CO.

H. WARD LEONARD.
E. M. IZARD.

1889

ELECTRICAL CONSTRUCTION AND REPAIR WORK FOR THE EDISON SYSTEM. ALSO ARCHITECTS, MOTORS, STORAGE BATTERIES, ETC., A SPECIALTY.

A FULL STOCK CARRIED OF ALL SUPPLIES REQUIRED BY EDISON PLANTS.

Dic. by H.W.L.

LEONARD & IZARD,

Consulting and Contracting Electrical Engineers,

ROOM 425, "THE ROOKERY."

Address reply to .....

RECEIVED

JAN 2 1889

EDISON LAMP CO.

Chicago, Dec. 29 th, 188 8

Edison Lamp Co.,

Harrison, N.J.

Gentlemen:--

We are getting out some circulars for distribution among such parties as are likely to desire information upon electric lighting, motors, etc., principally architects, lighting companies and owners of cheap power, and should like very much to receive as strong an indorsement from you as you care to give, as to our electrical ability, responsibility and experience in the electrical field.

We enclose herewith copy of circular letter sent to architects of Minneapolis & St. Paul. We now wish to get our circular broader in its scope, and shall hope to be favored with good testimonial from you.

Yours very truly,

Leonard & Izard.

per H. Ward Leonard

1 enclosure.

[ENCLOSURE]

Leonard, L. & I

1887

H. WARD LEONARD. W. S. ANDREWS. E. M. IZARD

LEONARD & IZARD,

INCANDESCENT ELECTRIC LIGHT PLANTS.
ARC LIGHT PLANTS.
ELECTRIC POWER TRANSMISSION.
ELECTRIC TRANSMISSION OF POWER.

Consulting and Contracting Electrical Engineers.

STORAGE BATTERY PLANTS.
ELECTRIC LIGHT WIRING.
HIGH ECONOMY STEAM PLANTS.
UTILIZATION OF WATER POWERS.

THE ROOKERY, CHICAGO.
ROOM 425. TELEPHONE 894.

LUMBER EXCHANGE, MINNEAPOLIS.
ROOMS 5 AND 6.

Dear Sirs:

The wide and constantly extending demand for incandescent lighting in Office Buildings, Stores and Private Dwellings, renders it almost imperative for Architects to give due consideration to Electric Wiring in connection with all first-class new work.

Many inexperienced and irresponsible firms throughout the country, taking advantage of the fact that the rules and regulations for safe wiring are not generally understood, make cheap bids and do very poor work, knowing that close inspection is often impossible after a building is finished, and trusting to get paid before it is put into practical service. The inevitable result is unequal distribution of light, frequent grounds and crosses, and a heavy bill for repairs, or it may become necessary to re-wire an entire building.

We employ none but thoroughly competent and skilled hands, and guarantee the use of nothing but the very best material, and having had many years experience in all the most advanced lines of this business, we are enabled to make our charges as low as can possibly be held consistent with first-class and reliable work.

Among our recently completed jobs in Chicago, we may refer you to The Rookery, and the Phenix Building, and among other work on hand, we may mention the Auditorium, where we are now putting in, under contract, the largest Isolated Plant in the country, which will comprise 10 Edison Dynamos, having a total capacity of 10,000 16 c. p. lamps.

We shall be pleased to draw up plans and specifications for you, and to bid on any Electric Lighting work you may wish to have installed.

Yours truly,

[ENCLOSURE]

BURNHAM & ROOT, Architects,
The Rookery.

CHICAGO, ILL., Nov. 5th, 1888.

Messrs. LEONARD & IZARD,
425, The Rookery, City.

Dear Sirs:

We are in receipt of yours of November 3rd, and take pleasure in recommending you and your work to whoever needs anything in your line. We regard your wiring as the best in the market, and know you to be thoroughly skillful in your business and entirely reliable.

Yours truly,

BURNHAM & ROOT.

HOLABIRD & ROCHE,
Architects,
Montauk Block, 115 Monroe Street,

CHICAGO, ILL., November 5th, 1888.

LEONARD & IZARD.

Gentlemen:

We take pleasure in stating that such contracts as have been awarded you by us, have been promptly and thoroughly executed.

Very truly yours,

HOLABIRD & ROCHE.

J. L. SILSBEE, Architect,
52 and 53 Lakeside Building.

CHICAGO, ILL., November 5th, 1888.

Messrs. LEONARD & IZARD,
City.

Gentlemen:

It gives me pleasure to be able to state that the different jobs of electrical work that you have done for me and my clients have been exceedingly satisfactory in all particulars.

Yours very truly,

J. L. SILSBEE.

[ENCLOSURE]

Copy.

OFFICE OF
ADLER & SULLIVAN,
Architects.

Room 56 Borden Block, Chicago, Nov. 5th, 1888.

Dear Sir:

I write this to introduce to your favorable notice Messrs. Leonard & Izard, who have been for a number of years the Chicago representatives of the Edison Light. They have done almost all of the electric lighting that has been let from this office, and also some of the best work done in this City from the offices of other architects.

As far as my observation and experience have extended, they have shown themselves thorough and reliable in their calculations, their designs, and in the execution of their work; always desirous of accomplishing the best possible results, and never cranky or uncontrollable, and possessed of abundant means to carry out all their contracts. I think, therefore, that you are to be congratulated upon their intention to establish themselves in your City, and I bespeak for them from you all the courtesy and consideration that you can possibly show them.

Very truly yours,

D. ADLER.

Lamp

THOMAS A. EDISON, PRESIDENT.

FRANCIS R. UPTON, GEN'L. M'G'R AND TREAS.

EDISON LAMP CO.,

Harrison, N. J., January 3rd, 1889

A. O. Tate, Esq., Secretary,

Edison Electric Light Co. of Europe, Limited,

Orange, N.J.

Dear Sir:-

We enclose letter of Mr Upton with statement of the royalty due for the 6 months ending Dec. 1st, 1888. We desire to pay this amount by check, and to give a new note to cover the old one issued by us. We enclose statementof the note.

Yours truly,

EDISON LAMP CO.

By Francis R. Upton

Treasurer.

[ENCLOSURE]

Lamp Co

EDISON LAMP CO.,

Harrison, N. J., January 3rd, 1889

A. O. Tate, Esq., Secretary,

Edison Electric Light Co., Of Europe, Limited,

Orange, N.J.

Dear Sir:-

The royalty due the Edison Electric Light Co., of Europe Limited, for lamps sold in France, Italy, Belgium, Russia, Austria Hungary, Denmark and Germany, amounts to $964.79.

We herewith enclose you our Six months note dated January 9th for $1770.72, also check for $1018.80.

Old Note, due January 9th, 1889		$ 2,735.51
Royalty		964.79
New Note	$1,770.72	
Interest on $1,770.72, 6 mos. at 6%	$ 54.01	
Amount of Royalty	964.79	
Check	$1018.80	

Yours truly,

EDISON LAMP CO.

By Francis R. Upton

[ENCLOSURE]

Copy.

STATEMENT OF LAMPS SOLD BY

ANTWERP AGENCY from January 1, 1888 to December 1, 1888.

For which the Edison Lamp Co. pays a royalty to the Edison Electric Light Co. of Europe L't'd. (Contract June 23d, 1887)

47234	France, Italy, Belgium Russia, Austria, Hungary Denmark	at 2c	$944.68
2011	Germany 1c.		20.11
			$964.79

Yours very truly,

(Signed) Philip S. Dyer, Agent.

THOMAS A. EDISON, President. FRANCIS R. UPTON, Gen'l Mn'r and Treas.

EDISON LAMP CO.,

Harrison, N. J., January 23rd, 1889

A. O. Tate, Esq., Private Secretary,

Orange, N.J.

Dear Sir:-

We return letter of Prof. Roberts, we have given orders to have the set of the parts mounted and sent to him.

We note how distinctly you write your signature with much amusement.

Yours truly,

EDISON LAMP CO.

By Francis R. Upton
Treasurer.

Lamp Co

THOMAS A. EDISON, President. FRANCIS R. UPTON, Gen'l. M'g'r AND TREAS.

EDISON LAMP CO.,

Harrison, N. J., January 24th, 1889

A. O. Tate, Esq., Private Secretary,

Laboratory of Thomas A. Edison,

Orange, N. J.

Dear Sir:-

We enclose a note of the Lamp Company which we desire Mr. Edison to endorse personally. This note does not increase our liabilities, and simply takes up another note of exactly the same amount and endorsed in same manner, in the German National Bank.

Our bills payable on November 1st, 1888 were $104,421.38, to-day, $76,978.57 showing a reduction of $27,442.81. We expect to cut down our bills payable $6,400. more before the end of the month.

Yours truly,

EDISON LAMP CO.

By Francis R. Upton

Treasurer.

Form No. 1. Simp C.

THE WESTERN UNION TELEGRAPH COMPANY.

This Company TRANSMITS and DELIVERS messages only on conditions limiting its liability, which have been assented to by the sender of the following message. Errors can be guarded against only by repeating a message back to the sending station for comparison, and the company will not hold itself liable for errors or delays in transmission or delivery of UNREPEATED messages, beyond the amount of tolls paid thereon, nor in any case where the claim is not presented in writing within sixty days after sending the message.

This is an UNREPEATED MESSAGE, and is delivered by request of the sender, under the conditions named above.

THOS. T. ECKERT, General Manager. NORVIN GREEN, President.

NUMBER	SENT BY	RCVD BY	CHECK
53	gn	ab	23 paid

Received at ORANGE, N. J. 5/6 2/2 1887

Dated Chicago 2

To Thos A Edison

Eight hundred sixty five shares signed fifty three more promised one hundred forty held by Mr Clarke now in Europe will duely sign

F R. Upton

From

THOMAS A. EDISON, PRESIDENT. FRANCIS R. UPTON, GEN'L M'G'R AND TREAS.

EDISON LAMP CO.,

Harrison, N. J., February 4th, 1889

A. O. Tate, Esq., Private Secretary,

Laboratory of T. A. Edison,

O r a n g e , N.J.

Dear Sir:-

Regarding the contract with Mr. Edison and the Company Continentale in Paris, I have not a copy of the contract at hand, but in accordance with the telephone conversation with you this morning, I am decidedly of the opinion that it does not provide for the payment of Mr. Edison's experimental expenses.

The contract does provide that in case Mr. Edison desires to sell his patents abroad that he should in France offer them to the French Co. at a price to be fixed by arbitration and that in other countries in Europe he should give 15 days notice to allow the French Co. to accept proposals at the same terms that other parties would accept.

This was the carrying out of the spirit and intention of the original contract with Mr. Edison and the time runs with the time that the French Company pay royalty to the Company in New York.

I thank you for the letters enclosed in your letter of Feb. 1st.

Yours truly,

Francis R Upton

Treasurer.

Japan

THOMAS A. EDISON, PRESIDENT. FRANCIS R. UPTON, GEN'L M'G'R AND TREAS.

EDISON LAMP CO.,

Harrison, N. J., February 16th, 1889

A. O. Tate, Esq., Private Secretary,

Laboratory of T. A. Edison,

Orange, N.J.

Dear Sir:-

Our trade for Norway is done through Mr. Dyer who is our agent in Europe.

Appropos of the Berlin Co. competition in Japan, I desire that you draw Mr. Edison's attention to the advertisement in the las London Electrician on the third page of the advertisements in which this advertisement states that the Berlin Company are prepared to close contracts for the erection of Central Stations in any part of the world.

Yours truly,

Francis R. Upton

Treasurer.

Lamps

THOMAS A. EDISON, President. FRANCIS R. UPTON, Gen'l Mg'r and Treas.

EDISON LAMP CO.,

Harrison, N. J., February 23rd, 188 9

Thomas A. Edison, Esq.,

O r a n g e , N.J.

Ans. 25/2/89

Dear Sir:-

Enclosed you will find a memorandum of the pressures upon the First District Station of Boston. This shows how closely regulation is under control in this station and guarantees to us good life of high economy lamps . Kindly return the test to us.

Yours truly,

EDISON LAMP CO.

By Francis R. Upton

Lamp Co.
THOMAS A. EDISON, President.

FRANCIS R. UPTON, Gen'l. Mg'r AND Treas.

EDISON LAMP CO.,

Harrison, N. J., February 26th, 1889

Thomas A. Edison, Esq.,

Orange, N.J.

Dear Sir:-

Enclosed is copy of letter sent Mr. Henry Villard, dated Feb. 23rd.

Yours truly,

Treasurer.

[ENCLOSURE]

Edison Gen. El. Co

Harrison, N.J. Feb. 23rd, 1889

Henry Villard, Esq.,

Mills Building, Broad St.,

New York City.

Dear Sir:-

By directions of Mr. Edison, I call your attention to the finances of the Edison Lamp Company.

On October 31st, 1888 when you last received a memorandum of our books, our surplus profits were $232,379.33. On January 31st, 1889 our surplus profits were $272,732.86.

On October 31st, 1888, the Company owed $156.058.15. On Jan. 31st, 1889 the Company owed ~~$164,324.68~~ 109,814.67. If the business is actively pushed I feel assured that this rate of profit can be easily maintained throughout the year to come. Of course to maintain this rate, we shall need an active trade in the fall to offset the dull months of the summer.

If the statement of the examiners had been made on the 31st of January 1889 instead of the 31st of October 1888, it would have added about $19,000. to our statement of profits of the year, as on our profits last year in the three months mentioned was $21.000. in place of $40,000. this year.

Yours truly,

Treasurer.

Copy.

THOMAS A. EDISON, President.

FRANCIS R. UPTON, Gen'l. M'g'r AND Treas.

EDISON LAMP CO.,

Harrison, N. J., February 27th, 188 9

A. O. Tate, Esq.,

Laboratory of T.A.Edison,

Orange, N.J.

Feb 29/89

Dear Sir:-

Regarding Mr. Ricalton, should we adjust accounts direct with him or through you ?

We think that the best way is for us to handle it directly, for in this case there can be no misunderstanding of any kind, as there has been with Hannington.

Have you cabled McGowan to return yet as mentioned by Mr. Edison the other day ?

Yours truly,

EDISON LAMP CO.

By Francis R Upton M.

Treasurer.

THOMAS A. EDISON, President.

FRANCIS R. UPTON, Gen'l. Mg'r. and Treas.

EDISON LAMP CO.,

Harrison, N. J., February 27th, 188 9

A. O. Tate, Esq., Private Secretary,
Edison's Laboratory, Orange, N.J.

Feb 28 88

Dear Sir:

Enclosed letter from Mr. Hannington. If you will state a time we will make an appointment for Mr. Hannington to come to the office at Harrison and go over the whole matter of the account between us and Mr. Hannington.

This is the best place for the meeting as all the papers and accounts are here, and any questions that may arise can be immediately referred to the correspondence and verified.

Yours truly,

EDISON LAMP CO.

By Francis R. Upton

Treasurer.

[ENCLOSURE]

Hon Secretary Harrington

New York Feb 26th 1889-

S. R. Upton Esq
Edison Lamp Co
Harrison New Jersey

Dear Sir

Yours of 22nd to hand- On receipt of your ~~Dre~~ letter to me, in regard to a settlement of this matter before Jan 1st, I saw Mr Tate (who gave me the money and made all the arrangements for my first trip to S.A.) he could not attend to it then, but made an appointment for the following Wednesday at your Office, I was there - but Mr Tate telephoned that he could not ~~keep the~~ come - but would let me know when he could meet me - since then I have seen Mr Tate twice, the last time I gave him, and endorsed, a draft for £122-19-8- sent me by you last Aug. to Buenos Aires - and returned to me a few days ago- I wish you to understand by this that it is not my fault, that this matter has not been attended to before this

Yours Truly
C. S. Harrington

THOMAS A. EDISON, PRESIDENT.

FRANCIS R. UPTON, GEN'L MG'R AND TREAS.

EDISON LAMP CO.,

Harrison, N. J., March 1st, 1889

A. O. Tate, Esq.,

Orange, N.J.

Dear Sir:-

We have your letter regarding Mr. Ricalton. We will endeavor to see Mr. Ricalton, and adjust the account.

Yours truly,

EDISON LAMP CO.

By Francis R. Upton

Treasurer.

Boston

THOMAS A. EDISON, President.

FRANCIS R. UPTON, Gen'l Mg'r AND Treas.

EDISON LAMP CO.,

Harrison, N. J., March 1st, 1889

Ans. 4/7/89

A. O. Tate, Esq.,

Laboratory of T.A.Edison,

Orange, N.J.

Dear Sir:-

If Tuesday morning of next week suits you to meet Mr. Hannington, kindly write him and make an appointment to have him come here at half past ten o'clock.

I expect to be here at that time. We have a note from Mr. Hannington stating that he can be here any time that suits your convenience.

Yours truly,

Francis R. Upton

Treasurer.

THOMAS A. EDISON, PRESIDENT.

FRANCIS R. UPTON, GEN'L MG'R AND TREAS.

EDISON LAMP CO.,

Harrison, N. J., March 1st, 1889

A. O. Tate, Esq., Private Secretary,

Laboratory of T.A.Edison,

Orange, N.J.

Dear Sir:-

Regarding the account between Mr. Edison and the Lamp Company. After deducting the bills rendered to you on account of the Paris Exposition, we find that there is a balance due to Mr. Edison of about $3,000. We will have a full statement made up to the first of the month in a day or two, and will send you a check covering the amount.

Yours truly,

EDISON LAMP CO.

By Francis R. Upton

Treasurer.

Form No. 6

THE WESTERN UNION TELEGRAPH COMPANY.

This Company TRANSMITS and DELIVERS messages only on conditions limiting its liability, which have been assented to by the sender of the following message. Errors can be guarded against only by repeating a message back to the sending station for correction, and the company will not hold itself liable for errors or delays in transmitting or delivery of Unrepeated Messages, beyond the amount of tolls paid thereon, nor in any case where the claim is not presented in writing within sixty days after sending the message.

This is an UNREPEATED MESSAGE, and is delivered by request of the sender, under the conditions named above.

THOS. T. ECKERT, General Manager. NORVIN GREEN, President.

NUMBER 3 | SENT BY | RECD BY

CHECK 72 Paid

Received at UNDERBANK BROADWAY AND LIBERTY STREET, 261 BROADWAY, CORNER MAIDEN LANE, 1 MADISON AVE. March 7, 1889

Dated New York 7

To Francis R Upton, Edison Labo Co.

Will works be operation at Edison Laboratory Saturday afternoon answer by mail

Yrs Jno B Dennis

THOMAS A. EDISON, PRESIDENT.

FRANCIS R. UPTON, GEN'L M'G'R AND TREAS.

EDISON LAMP CO.,

Harrison, N. J., March 8th, 1889

A. O. Tate, Esq. , Private Secretary,

Laboratory of T.A.Edison,

Orange, N.J.

Dear Sir:-

Regarding the letter of the Allegomeine Elektricitats-Gesellschaft, the objection that Frazar & Co. make is that the goods are sold in Japan using the name of Edison. It is to this that their great objection has been made. That others should be using Edison's name in Japan, thus robbing Mr. Edison of the use of his name which is his own property, to the benefit of those who have received no license to use it, and give him no benefit for such use.

I think that strong influences might be brought to bear upon the German Company by which they will withdraw from the that the whole world belongs to them, thus leading to active competition between the various Edison interests in all parts of the world. If this can be done, of course it will be far better than just stopping them from the use of Mr. Edison's name in Japan.

Yours very truly,

Francis R. Upton

Treasurer.

Lamp Co

EDISON LAMP CO.,

Harrison, N. J., March 12th, 188 9

A. O. Tate, Esq., Private Secretary,

Laboratory of T. A. Edison,

Orange, N.J.

Dear Sir:-

Your letter of March 9th received. We herewith enclose you a list of our notes bearing Mr. Edison's endorsement, as requested.

Our Six months note favor of Corning Glass Works due ~~March~~ 27th for $4000.00

Six months note favor Corning Glass Works due April 2nd, for $4000.00

Six months note favor Corning Glass Works due April 22nd for $5000.00

Six months note favor Corning Glass Works, due April 30 the for $5000.00

Four Months note favor German National Bank due April 29th for $2500.00

Six months note favor Corning Glass Works, due May 27th for $4500.00

Six months note favor Corning Glass Works due May 31st, for $5000.00

Five months note favor German National Bank, due May 26th for $2500.00

A. O. Tate, Esq., Private Sec. No. 2.

Four months note favor German National Bank, due May 29th
for $5000.00

Four months note favor Corning Glass Works, due June 10th
for $10,876.49

Four months note favor German National Bank, due June 12th
for $5000.00

Four months note favor German National Bank, due July 5th
for $5000.00

Yours very truly,

EDISON LAMP CO.

By J.F. Melick

THOMAS A. EDISON, PRESIDENT.

FRANCIS R. UPTON, GEN'L M'G'R AND TREAS.

EDISON LAMP CO.,

Harrison, N. J., March 13th, 188 9

Thomas A. Edison, Esq.,

Laboratory,

Orange, N.J.

ans. 15/3/89

Dear Sir:-

Shall we cease paying James Ricalton his salary ?

Yours truly,

EDISON LAMP CO.

By Francis R. Upton

Treasurer.

Yes. His Engagement has expired 1889

Boxford

THOMAS A. EDISON, PRESIDENT.

FRANCIS R. UPTON, GEN'L. MG'R AND TREAS.

EDISON LAMP CO.,

Harrison, N. J., March 18th, 188 9

A. O. Tate, Esq., Private Secretary,

Edison's Laboratory,

Orange, N.J.

Dear Sir:-

Enclosed is memorandum regarding Mr. Mannington's trip. We desire to know if we shall transfer the charge which we have made of $350.00 to Mannington to expense for Jamacia trip If this is the case, we wish you to render us a memorandum stating that $350.00 have been expended in Jamacia trip as per instructions of Mr. Edison, If you will render us this, we will then close out the account, and $20.00 will be credited to Mr. Mannington which deducted from the $149.50 which he acknowledges owing us, will leave him owing us $129.50/

Yours truly,

EDISON LAMP CO.

Francis R Upton Jr.

Treasurer.

[ENCLOSURE]

Brooklyn,

THE EDISON LAMP CO.,

Harrison, N. J., March 8 1887

The following is a Statement of C. F. Hammington's Fibre Expedition accts.

1st Trip

On Sept 27/87 Mr Gale while at the Lamp Co. made out a check payable to Mr Edison and entered on the Stub "Advance to Hammington Jamacia Trip" $350.00

Previous to this rec'd 20.00

Mr Hammington on a/c of Salary 330.00

2d Trip

Feb 16 '88	By Cash	$1330.00	
14	"	50.00	
Aug 1	"	600.00	
Sept 14	"	500.00	
Oct 6	"	250.00	
			2730.00
Oct 14	By Bill rec'd	$1930.50	
Feb 21/89	" Night rec'd	600.00	
2 weeks ending Dec 30th	" Salary to "	60.00	2590.50
			1449.50
			1449.50

Burford

EDISON LAMP CO.,

Harrison, N. J., March 27th, 1889

A. O. Tate, Esq., Private Sec'y,
Laboratory of T.A.Edison,
Orange, N.J.

Ans. 29/3/89.

Dear Sir:-

Have you heard anything from McGowan when he will return ?

Yours truly,

Francis R. Upton

THOMAS A. EDISON, PRESIDENT. FRANCIS R. UPTON, GEN'L M'G'R AND TREAS.

EDISON LAMP CO.,

Harrison, N. J., March 29th, 1888

A. O. Tate, Esq., Private Secretary,

Laboratory of T.A.Edison,

Orange, N.J.

Dear Sir:-

The following is an extract from letter from Mr. Dyer,

"The Edison & Swan Co. feel strong now, and I would not be "surprised at any move they might make to keep us out of

"England. I have not a copy of the English contract, so do "not know whether the E & S Co. can be compelled to sell our "lamps or not. Wish you would read over the contract which "Mr. Edison no doubt has, and give me your opinion on this "point."

If you will send us a copy of anything in the English contract that bears upon this matter we would consider it a favor . We will forward same to Mr. Dyer.

Yours truly,

EDISON LAMP CO.

By Francis R. Upton

Treasurer.

Lamps

THOMAS A. EDISON, PRESIDENT. FRANCIS R. UPTON, GEN'L MG'R AND TREAS.

EDISON LAMP CO.,

Harrison, N. J., April 5th, 188 9

Thomas A. Edison, Esq.,

Laboratory,

Orange, N. J.

Dear Sir:-

The following is quotation from letter of Mr. P. S. Dyer:-

"Am sorry that you are troubled with competition in price of lamps, but think 60 cents is near the proper price for a good "lamp. I do not think it will go lower, but the day of high "priced lamps has gone past, however the cost of a good lamp at "60 cents in the cost of an installation is so small that the "price is low, and still allows of a good profit. Lamps are sold "in Germany all around (50 cents) 2 marks. "Schuckert" pays "about 2 marks, so he told me lately, but the general price in m "most parts of Europe is around 80 cents ,(4 francs) I am now "after an order for South America about 1000 monthly, and will "reserve about 20 % royalty for the Edison Company. The Paris "Co. are now fighting Siemens & Halske and may break with them, "hope they will. The Paris Company claim that Seimens & Halske "have been underselling them in Russia and Austria where they had "a contract to keep the price up, I believe to 5 francs stiff, "I feel that if our lamp keeps up in quality &c, that we will do "a good business in Europe this fall and winter."

Yours truly,

EDISON LAMP CO.

By Francis R Upton

Treasurer.

Lamps

THOMAS A. EDISON, PRESIDENT. FRANCIS R. UPTON, Gen'l. Mg'r AND TREAS.

EDISON LAMP CO.,

Harrison, N. J., April 10th, 1889

Thomas A. Edison, Esq.,

Laboratory, Orange, N.J.

Dear sir:-

We have received a cable from Dyer as follows:

"Can I promise Milan 10 C.P. lamps, 3 watts and when ". We have replied to him "Promise Milan November".

We feel certain from results obtained in the Laboratory tests that no difficulty will be met in making 10 C.P. lamps to take 3 watts per candle. We have therefore accepted the responsibility of promising delivery. There is no question that if you can make a 10 C.P. lamp of this economy, we can very largely increase our lamp sales, as there is a large demand for this unit of light for decorating purposes in all public places like Cafes in Europe. The whole intention is to make the most show and to have the smallest unit of light, so as to point out that they have many hundreds lamps in their place. The people are not educated up to a clear appreciation of candle power, but to an appreciation of the number of lamps in use.

Yours truly,

EDISON LAMP CO.

By Francis R. Upton

Treasurer.

THOMAS A. EDISON, President. FRANCIS R. UPTON, Gen'l. Mn'g and Treas.

EDISON LAMP CO.,

Harrison, N. J., April 11th, 1889

Thomas A. Edison, Esq.,

Laboratory,

Orange, N.J.

Dear Sir:-

I have had the figures upon your paper for the past two days. I intended to go up and see you this afternoon, but am compelled to go to Philadelphia regarding a matter that I consider of importance there.

I hope to see you either to-morrow or Friday and then lay before you some corrections on the paper, and also some remarks regarding the price of lamps which I have been preparing for you.

Yours very truly,

Francis R Upton

THOMAS A. EDISON, PRESIDENT.

FRANCIS R. UPTON, GEN'L MG'R AND TREAS.

EDISON LAMP CO.,

Harrison, N. J., April 15th, 1889

Thomas A. Edison, Esq.,

Laboratory,

Orange, N.J.

Ans. 16/4/89

Dear sir:-

In speaking with Mr. Storinger regarding Tacoma, I find that there is a plant there put in by Michell & Spaulding, under the supervision of John Ward. This plant has 1200 volts E.M.F. 3 wire system using 600 volts upon a side. The plant is a thorough success and gives great satisfaction to the people, and is proving to be very profitable. The lamps used are Municipal lamps with Municipal Cut Outs. These lamps are used in stores and for all uses where electric lighting is desired.

Yours very truly,

Francis R. Upton

THOMAS A. EDISON, President. FRANCIS R. UPTON, Gen'l. Man'r and Treas.

EDISON LAMP CO.,

Harrison, N. J., April 16th, 1889

Thomas A. Edison, Esq.,

Laboratory, Orange, N.J.

Dear Sir:-

Enclosed correspondence regarding the exchange of sockets. We desire your approval of the proposition made by us to the Boston Company as we wish to make it to other companies.

If you do not approve of the general nature of the proposition, kindly state what modification you desire us to make.

Yours very truly,

EDISON LAMP CO.

By Francis R. Upton

Treasurer.

EDISON LAMP CO.,

Harrison, N. J., April 16th, 1889

Thomas A. Edison, Esq.,

Orange, N.J.

Dear Sir:-

Enclosed you will find the cost sheet for 1888.

Yours truly,

EDISON LAMP CO.

By J. F. Mulick

[ENCLOSURE]

lamps +

MEMORANDUM REGARDING SELLING PRICE OF LAMPS.

In the year 1888 the Lamp Company sold	1,206,603 lamps
The cost of each lamp per the Cost Sheet which is made up distributing all items of expense to each part of the manufacture, was.....	$0.2864
The cost of each lamp found by dividing the gross cost of manufacturing lamps in the year 1888 by the number of lamps produced, makes the cost of each.....	$0.2838
The average of these two figures makes the cost of the lamp during the year 1888	$0.28 1/2
In the United States during the year 1888 there were sold were sold...	1,006,878 lamps
These lamps brought	$0.42
This makes a profit per lamp sold in the United States of.....	$0.14 1/2
The Lamp Company sold to the Illuminating Companies in the United States in the year 1888	602,919 lamps
The Lamp Company sold on account of the Light Co. in the year 1888,.	403,659 lamps
The Light Company received as royalty for lamps during the year 1888,.....$.	83,500.
If the Light Company had received full royalty upon this, they would have received. .....$	165,500.19

The increase from lamp renewals does not increase as the natural increase is more than met by the inroads of our competitors, who can make a profit of 35 cents by selling to our customers.

At the present rate that the Edison Company is losing customers the Edison Light Company's income will diminish one half inside of two years. This in its turn will raise the cost of the lamp in the factory of the Edison Lamp Company two or three cents per lamp, if the sales to the Illuminating Companies do not increase to make up the deficiency.

Now let us see if we cannot devise a scheme that will not only ruin the lamp renewal business of our competitors, but give to the Edison Company's business commercially an increase, so that more money will be made than now by the Edison Light Co. and Edison Lamp Co. together. From estimates made by Mr. Steringer the total lamp output of the competitors of the Edison Company is.....(11,000daily

Last year the Edison Lamp Company made 4,000 daily

[ENCLOSURE]

Suppose the Edison Company sell all lamps at 40 cents. If this was the case the Edison Light Company and the Edison Lamp Company combined would lose just the amount the Edison Light Company now make, under the conditions that there was no increase in the sales of lamps.

Now I can devise a change in the method of making lamps that will save just 5 1/2 cents per lamp, this reducing costing price to. $0.23

The 5 1/2 cents for lamps upon the sales of 1888 makes a saving of..... .....$ 66,368.11

This reduces the loss of the Edison Light Company and the Edison Lamp Company, at selling lamps at 40 cents each to. .....$ 17,132.

The lowest price that competitors of the E Edison Company can make lamps, ship and sell same for is:::::::::;;;..... $0.50

This being so, and as the Edison Company can offer better lamps for 40 cents, it is reasonable to assume that we shall get a large fraction of their trade. Assuming this to be less than one fifth of their out put or 2000 lamps a day that is gained by the Edison Company, the nature of the lamp business is such that the general expense per lamp largely diminishes as the output increases.

I estimate that an increase of 2000 lamps a day or 600,000 lamps a year will reduce the cost of the lamp 3 cents, that is, from 23 cents to 20 cents. That is the three cents saved upon the original output upon 1,206,613 lamps is.....$ 36,200.

This changes the loss of $17,132. to a gain of $ 19,067.

Now the profit upon 2000 extra lamps a day or 600,000 costing 20 cents each and selling at 40 cents is.. ....$ 120,000.

Adding to this the gain made upon the original output $19,067, this would make a total gain on the output of. .....1,806,613 lamps of.....$ 139,067.

That is if the combined Companies are $139,067 better off than they were in 1888, and the universal price throughout the United States is 40 cents which is 10 cents lower that the opposition companies now make lamps for.

My improvement mentioned by which 5 1/2 cents a l lamp is saved will make the difference on the estimated output at selling price of 40 cents of 1,806,693 lamps of .. ..$ 99,367..

Included in this improvement is $139,067., therefore, if there is no improvement in the cost of lamps due to the methods of manufacturing lamps, can be sold at an average price of 40 cents each and the business be more perfectly controlled than to

(2)

[ENCLOSURE]

today and still a profit be made of ....$ 39,699.

I propose that the Edison Company first reduce the price of Isolated renewals to 60 cents to the customers of the Edison companies. This to be a temporary expedient to prevent the customers of the Edison Company leaving the Edison Company too rapidly. Then, try to get the renewals from the opposition companies at 40 cents, or what would perhaps be better, offer our lamps at 60 cents give guarantee and agree in case the customer will agree to take all lamps from us for two years to give him a rebate that will bring the price to 40 cents. To get customers from other companies we should give our sockets at cost or make lamps for competitors sockets.

Supposing lamps were sold at 35 cents each, the loss of 5 cents on 1,806,693 lamps will amount to .....$ 90,334.

This taken from the gain of $139,067. will leave still a gain of.....$ 48,733.

If this reduction of price would enable us to take 1000 lamps more daily or 300,000 lamps a ye ar, this would add to the profits mentioned above an additional profit of $45.000. making a total profit, while selling price of lamps was 35 cents each, of.....$ 93,733.

[ENCLOSURE]

Summary, 85 cents and 42 cents selling price,

Year 1888, Profit Lamp Co.	$ 138,523.07
Light Company	83,500.00
Total	$ 222,023.07

Estimated 40 cents selling price all round,

Sales 1,800,000 , Profit per lamp of 20 cents	$ 360,000.
Edison Light Co. Royalty	100,000.
Lamp Co. will net	260,000.
Gain 1888	$ 138,523.
Gain to Lamp Co. over 1888,	121,477.

At 35 cents selling price all round sales 2,500,000 or equal to present capacity, Lamp Co. adding only to rooms for socketing and packing

Profit 16 cents per lamp	$ 400,000.
	100,000.
	$ 300,000.
	138,523.
Gain to Lamp Company, over 1888,	$ 161,477.

Year 1890 at 32 1/2 cents selling price all round

Sales 3,000,000

Profit 32 1/2 less 18 14 1/2	$ 435,000.
	100,000.
	$ 335,000.
	138,523.
Gain to Lamp Co. over 1888	$ 196,477.

EDISON LAMP CO., 4/29/89

Harrison, N. J., April 16th, 1889

A. O. Tate, Esq., Private secretary,

Laboratory of T. A. Edison,

Orange, N.J.

Dear Sir:-

I showed the memorandum from letter of Mr. Dyer to Mr. Edison, and he made no remarks on same. I think these extracts should be in your files, so send them to you.

Do you khow anything about Gourauds relations with Hammer regarding the Phonograph ?

Yours truly,

Edwin R. Upton

[ENCLOSURE]

E1.21 - Italy

Apgate.

You must also understand that I do not feel like launching out into new schemes for the developement of our european business until I know the policy which the New Co. wish to pursue over here. I feel that we have a future that will assist the manufacturing Companies in handling their out put, but until the New Co get ready for business it is a matter of waiting for their decision to do something in a certain way, or use my judgement and do the best I can, At present I am on splendid terms with the factions, even the Berlin Co. acknowledge the force of m-y argument, and are willing to sell the American Edison lamps, altho', they had flatly refused to do so some two months back.

The Italian Co. are now being pressed hard by the "Kholinsky" people who are introducing lamps into Italy, and selling them at 52 cents F.O.B. Milan. The K. people are anxious for the Milan Co. to make a fair test of their lamps, and offer to make lamps of any efficiency 2,--2 1/4,-2 1/2,-3.-- 3 1/2,watts per candle with guaranteed life respectively of 200--300--500--700-- and 1000 hours. Lamps,of any C.P. above 8 with these efficiencies, and with any form of terminals, Enterprise of this kind is hard to beat, and if we did not have a good friend in Milan our lamp trade in that quarter would give me a lot of trouble. The largest customer of the Italian Co. is the Gas Co. at Rome lately they have wanted a 10 C.P. lamp of 3.1 watts per candle but I could not supply better our new 16 C.P. at 10 candles 4.14 watts per candle.

[ENCLOSURE]

Hope this will satisfy, but if not, the Italian Co. might lose this customer, and it would be a hard blow to them. I am sending you this week 10 C. 3 watt lamps made by "Khortinsky" Swan Factory "Kalk" and Vienna. My business here is fair. I am promised orders from the Paris Lamp Co., after they get rid of the stock of lamps left on their hands by the Cie Continentale Edison 40 or 60 thousand, but as they are mostly 8 C. 45 volt lamps they will soon need some 16 C.P. lamps from my stock.

Sawyer-Mann

EDISON LAMP CO.,

Harrison, N. J., April 24th, 1880

Thomas A. Edison, Esq.,

Orange, N.J.

Ask Mr. Upton & Sq

Dear Sir:-

Attached to this is memorandum showing per cent of Sawyer-Mann lamps used on Edison Isolated plants in Boston, Mass as reported by Mr. Card.

Yours very truly,

EDISON LAMP CO.

By Francis R. Upton

Treasurer.

This is good information

[ENCLOSURE]

Swan Mfg.

Copy

Boston, Mass. April 18. 1889.

Mem. showing per-cent of Swan. Mann lamps used on Edison Isolated plants reported up to this date.

Name of Plant.	Originally Edison.	SM.	Edison.
1. Jordan, Marsh Co.	194		194
2 R.H. White Co.	400	100	300
3 Chickering & Sons.	180	50	130
4 State House	110	- - -	110
5 Boston Music Hall	600	——	600
6 Boylston Building	790	395	395
7 Boston P. O.	1000	650	350
8 Hotel Vendome	350	50	300
9 Cobb, Aldrich & Co.	147	——	147
10. Mechanical Refrigerator Co.	80	——	80
11 J.W. Fifth	900	600	300
12 East Boston Ferry Co.	45	——	45
13 N.E. Conservatory of Music	725	100	625
14 Adams Express Co.	110	25	85
15 Boston Cordage Co.	250	——	250
16 Suffolk Printing Co.	75	——	75
17 Boston Globe	800	——	800
18 R.H. Mower Medical Co.	700	——	700
19 Boston Herald	600	——	600
20 Boston Daily Advertiser	160	160	——
21 S.S. Pierce Co.	900	——	900
	9116	2130	6986

A little over 23% S-M.

B.J. Card

Lamps

EDISON LAMP CO.,

Harrison, N. J., April 26th, 1889

Thomas A. Edison, Esq.,

Orange, N.J.

Dear Sir:-

These are extracts from letters written to Bergmann & Co. by their traveling salesman. We shall have our inspector soon go over the route visited by this man, and investigate the complaints brought to us through Bergmann & Co.

Yours very truly,

EDISON LAMP CO.

By Francis R. Upton

Treasurer.

1 enc.

[ENCLOSURE]

Rochester, N.Y.

In regard to the lamps used at this station, they are all of "Edison pattern", but the lamps are giving poor satisfaction. It is the same story of "loss of candle power" that I hear all along. The lamps are bright enough on the start, but after they have been run from four to six weeks, they slacken and lose candle power to such an extent as to cause the consumers to complain of the same. Naturally, the first thing that suggests itself is, that the lamps have been overrun, but I am given to understand that this is not the case, and that the fault is with the lamp alone. This being the complaint all along, there can be no doubt as to the above being authentic. This station is now running about 9000 lamps, and although the Edison lamp is being used throughout, it is a matter of question as to whether they will continue to do so. There was nothing said as to the possibility of the Sawyer-Mann lamp supplanting the Edison, but on the whole this signifies nothing. Time alone can tell how long they will continue to use the Edison lamp. In regard to the lamp question as applied to the company at LOCKPORT, I would state, that they have given up the Edison lamp entirely, and are making use of the Sawyer-Mann lamp now altogether. The reason is, that the price of the Edison lamp is too high; and the loss of candle power is unwarrantably rapid.

As to the lamps at ALTOONA, this Company are having the same experience, viz:- Loss of candle power, breakage frequent &c.

[ENCLOSURE]

They were loud in their complaints as to the lamps, and were particularly anxious to know if the Lamp Co. were going to give them a better lamp and how soon.

Lamps were what the Manager of the station at BELLEFONTE had most to say about. They have had a hard time with the "High Economy Lamp" A new defect in the lamp is that the current will in some cases arc across the platinum legs, at the top of the seal, and blow the seal to pieces. The usual complaint as to loss of candle-power and breakage was made, and particular stress was laid on the breaking of a large per cent of the lamps when first set up.

Sawyer-Man EDISON LAMP CO.

Harrison, N. J., May 7th, 1889

Thomas A. Edison, Esq.,

Orange, N.J.

ack May 7/89

Dear Sir:-

Enclosed herewith is copy of Mr. R. F. Card's report upon a number of stations in New York City, showing the per cent of Sawyer Man lamps in use.

Yours very truly,

EDISON LAMP CO.

By Francis R Upton

Treasurer.

[ENCLOSURE]

Sawyer-Man

Harrison, N. J. April 24, 1889.

Mem. showing per-cent of Sawyer-Man lamps used on circuits of Edison Isolated plants inspected from April 1st to date.

		Originally Edison	S.-M.	Edison
1	Abercrombie Bros.			
	Dry goods 3d Ave. and 59th St.	1200	—	1200
2.	Broadway Theatre	1050	—	1050
	Cor Broadway & 41st St.			
3	National Theatre			
	104 and 106 Bowery	225	225	—
4	Arion Society			
	59th St and Park Ave.	1200	—	1200
5	B. T. Babbitt			
	82 Washington St.	100	—	100
6	Peter Dolger			
	Brewery Foot East 55th St.	300	—	300
7	Murray Hill Hotel	1100	100	1000
	Cor Park Ave and 40th St.			
8	Osborne Apartments.			
	7th Ave and 57th St.	1100	100	1000
9	Schwarzchild, Sons & Co.			
	Ave "A" and 64th St.	900	—	900
10	Metropolitan El. Co.			
	18 Courtland St	900	—	900
11	Newfoork Produce Ex.			
	Cor Mitchell & Stone Sts.	2000	—	2000
12	Emigrants Savings Bk.			
	51 Chambers St.	250	—	250
13	Ed Jaffray & Co.			
	Dry Goods, Broadway Nr.	50		50
	Amount carried forward.	10,825	425	10,400

[ENCLOSURE]

		Originally Planned	S. M.	Edison
	Amount brot forward	10,825	4,637	10,400
14	T. A. Leggett Md Co.			
	Grocers, 128 Franklin St.	375	25	350
15	Vogel Brothers			
	8th Ave and 42nd St.	500	—	500
16	Everett Hotel			
	104 Vesey St.	350	350	
17	American Express Co.			
	65 Broadway	600	250	350
18	Grand Cent. Depot Annex	214	214	
19	Columbia College			
	Cor. Mad. Ave and 49th St.	500	—	500
20	Hills Building			
	Broad St. cor Exchange Pl.	1300	—	1300
21	Merchants Building			
	Stone St. near Whitehall	200	130	70
22	Aldrich Court			
	45 Broadway	1250	50	1200
23	Lemon Bache and Co			
	Cor Vestry and Greenwich St.	350	—	350
24	Koster and Bials			
	23d St.	300	—	300
25	Eden Musee			
	23d St	400	100	300
26	Niblos Theatre 8th Ave.	297		297
27	N.Y. Athletic Club Cor 59th St.	538	413	125
28	N.Y. World, Park Row	650	550	100
29	Roberts Co. Cor Grand & Ruffitts	350	—	350
13% S.M.	— — — — —	18,999	2,507	16,492
	Boston 21 Plants	9,116	2120	6,996
Percent of S.M. camps for 1st 50 plants		28,115	4,637	23,488
	16%			

Lamps

THOMAS A. EDISON, PRESIDENT. FRANCIS R. UPTON, GEN'L MG'R AND TREAS.

Ack May 9/89.

EDISON LAMP CO.,

Harrison, N. J., May 7th, 1889

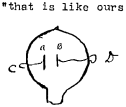
Thomas A. Edison, Esq.,

Laboratory, Orange, N.J.

Dear Sir:-

The following is an extract from a letter which I received from Francis Jehl, dated Brunn, March 21st.

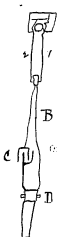
"I have seen the lamps I wrote to you about. It is not exactly "as I then thought. It is a lamp that emits light by means of an "incandescent body, but is in no way similar to the present lamp, "that is like ours.



"This figure will show you how the lamp is. "It consists of two electros or plates of "platinum or carbon, A.B. as shown (not in "connection but simply facing each other) asn "when a current of a certain description is "connected at the ends C & D, there is a small "blue arc ≡≡ in the beginning and then "all at once these plates become incandescent "and give out light. The Dr. intends only to use carbons electros "as with platinum ones the heating point is too low and they melt. "I have seen some lamps having platinum electros and with about "3000 volts they glowed very brightly and the distance between them "was about 8 m/m. There is a vacuum in the lamp but not very high. "If the vacuum is high the spark will not jump, and if very low "there will be a sparking, but the plates or electros will not "glow. He is now working on carbons plates and intends to use "gases in the lamp rarefy to the extent required. In the lamps of "carbon plates the electros are very near to each other perhaps a "about 1 m/m apart. I have seen some lamps and they gave a pretty "good light. Now the other part of his system has also some good "points as it saves copper in the conductors. He does not send "3000 volts from the station to the place of consumption as one "might at first suppose, but his system is something as follows

over

T.A.Edison, Esq., No. 2.



A is a continuous current machine, one having very "little or no self induction and giving say 400 volts or "anything we please according as we wish to save in the "conductors. The current passes through the lines 1 & 2 "into a disjunctor B, (an apparatus for reversing the "direction of the current). This current charges a "condenser C which discharges through a sort of induction "coil D, the secondary of which is connected with the "extremities of the glow lamp E.

"One is apt to think that it is not possible to "change the direction of a current in a dynamo machine "without causing a cross or interruption and sparking "This however is not so in this case, because when the "current charges the condensers, and the condensers are "charged, there is no current flowing in the line at "that moment and because the tension of the condensers "is the same as that of the dynamo, but opposite, thus "equalizing. At this moment the poles are changed at "the disjunctor. He used a very high rate of discharge "or rather reversal very much more than that used in transformators. He carries the low volts up to the lamp "and only at the lamp the high volts are generated as he intends "each lamp or group of lamps to have such an induction coil "D" "which in itself is very small, being about 8 centimeters by 4 "large. He has also shown me this same system of distribution "working our lamps, that is, instead of his lamp at "E" one of "our lamps. Of course in this case the induction coil "D" was "wound differently. I have thus given you the outlines of this "system which will help you to form an idea of it. You have asked "me if you can tell it to Mr. Edison, why certainly, I consider "myself always yet belonging to him, as today I am in the company "yet to which he sent me. I heard Mr. Edison had an accident, but "was very happy to hear afterwards that it was not serious."

Yours very truly,

Francis R Upton

THOMAS A. EDISON, PRESIDENT.

FRANCIS R. UPTON, GEN'L MG'R AND TREAS.

EDISON LAMP CO.,

Harrison, N. J., May 11th, 1889

A. O. Tate, Esq., Private Secretary,

Laboratory,

Orange, N.J.

Dear Sir:-

We have referred all the correspondence regarding advertising in the Official Catalogue to Mr. Dyer. We think that if any advertising is needed, which by the way we do not think essential to Mr. Edison's reputation, that it should go in the name of Mr. Dyer as selling agent for Mr. Edison's material.

Yours truly,

EDISON LAMP CO.

By Francis R. Upton

Treasurer.

THOMAS A. EDISON, PRESIDENT.

FRANCIS R. UPTON, GEN'L MG'R AND TREAS.

EDISON LAMP CO.,

Harrison, N. J., May 13th, 1889

Thomas A. Edison, Esq.,

Orange, N.J.

Dear Sir:-

Ans. May 14/89

Enclosed is letter from the Piqua Company which you will kindly return to us after reading.

Mr. Edgar of the Boston Company reports to us that in selling new plants, that in 40 hours, and never less than 60 hours from time of starting, he receives word that the lamps are not giving the light that they should give.

Yours truly,

EDISON LAMP CO.

By Francis R Upton

Treasurer.

enclosure.

EGEC

1889-05-14.

THOMAS A. EDISON, President.
CHAS. BATCHELOR, Vice Pres't.

SAMUEL INSULL, Treas. & Gen'l. Manager.

J. HUTCHINSON, Secretary.
JOHN KRUESI, Asst. Gen'l. Manager.

General Office and Works
SCHENECTADY, N.Y.

The Edison Machine Works.

No. 19 Dey Street,

Cable Address,
"EDISON, New York."

New York, N.Y. May 14th, 1889.

The Edison Lamp Co.,

Fort Meyers, N.J.

Dear Sirs:

I shall be glad if you will supply me with the information enumerated below at your very earliest convenience. This information I require so as to enable me to place Mr. Merrick in full possession of the financial standing of our manufacturing establishments and the United Company:

I. A comparative Trial Balance showing your balances of Nov. 1st, 1888, and also each succeeding closing up to and including May 1st, 1889. (This comparative Trial Balance should not be given in detail, but should be condensed; your Accounts Payable being grouped under one heading, and your Accounts Receivable under another heading, and such other condensation as would occur to you as desirable.)

II. A detailed statement of your Accounts Receivable. (If you consider any accounts in this statement to be of less value than their face please mention the fact.)

III. A detailed statement of your Accounts Payable.

IV. A detailed statement of your Notes payable giving the date of each note, to whose favor it is drawn, the indorsement, if any, on it, the date it matures and where it is payable.

V. A detailed statement of your Notes Receivable, stating whether they have been discounted, by whom discounted, the date they were drawn, the date of maturity and where payable.

VI. A detailed statement of your sales, giving each month separately; a statement to show simply money values and totals for the period extending from the 1st of November to the 1st of May.

VII. A statement of estimated profits for the same period, giving each month by itself.

It is important that I should have these statements by the close of the week. I have made a similar request of the Edison Machine Works, Messrs. Bergmann & Co. and the Edison United Manufacturing Company.

Yours truly,

EDISON LAMP CO.,

Harrison, N. J., May 24th, 1889

A. O. Tate, Esq., Private Secretary,

Orange, N.J.

Dear Sir:-

I desire to read through all Mr. Edison's contracts regarding electric light, if Mr. Edison will give me permission so to do. Will you kindly let me know where I can find them and to read, and when.

Yours very truly,

Francis R. Upton

THOMAS A. EDISON, PRESIDENT. FRANCIS R. UPTON, GEN'L MG'R AND TREAS.

EDISON LAMP CO.,

Harrison, N. J., May 27th, 1889

Thomas A. Edison, Esq., Ans. May 31/89

Laboratory, Orange, N.J.

Dear Sir:-

With this are drawings of the Furnace. We have no means of blue printing in our factory and send you the original drawings which you will kindly return to us when you are through with them.

We have all the material on the floor of our machine shop for the erection of the furnace in accordance with these drawings at half scale.

Yours truly,

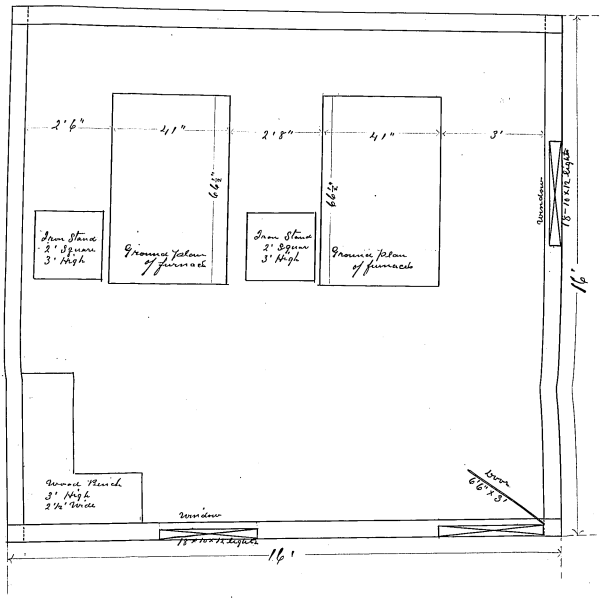
EDISON LAMP CO.

By Francis R. Upton

Treasurer.

96 Batch

[ENCLOSURE]



Plan of Wooden Building
for two Parbuiging furnace 16' Square

Scale ½" = 1' March 4/88 B. E. & C.

[ENCLOSURE]

Edwin Lamb & Co

Mch 3/89

Lumber for Carbonizing House
for two Gas Furnaces

Sills – 3" x 6" Spruce Laid flat half Ends [illegible] thru
Corner Posts " 4" x 6"
Ties & Ends ties to be 4" x 4" Spruce
Studding to be Hemlock 3" x 4" – Set 16" Centre
Roof Beams 2" x 6" Spruce 20" Centres
Roof – Cover With Hemlock Lath then Paper then Tin
Cover the Entire Building With Narrow Novelty Siding
1¾" Panneled Door
Windows 18 lights Each – 10" x 12" Glass Hung on Pully Sash
Building to be 14' High 16 ft long 14 ft Wide
Mounted on Brick or Wooden Piers
To have a Brick floor Brick Laid on Edge

Bradley

EDISON LAMP CO.

Harrison, N. J., May 31st, 1889

A. O. Tate, Esq., Private secreatry,

Laboratory of T. A. Edison,

Orange, N.J.

Dear Sir:-

Your letter of May 31st regarding Gas Furnace Drawings received. These drawings were not what Mr. Batchelor required therefore he returned them to us.

Yours truly,

EDISON LAMP CO.

By J. Emilick

Lamp Co.

THOMAS A. EDISON, PRESIDENT. FRANCIS R. UPTON, GEN'L M'G'R AND TREAS.

EDISON LAMP CO.,

HARRISON, N.J., July 25th, 1889

Thomas A. Edison, Esq.,

Laboratory, Orange, N.J.

Ans. July 27/89

Dear Sir:-

Your favor of the 24th inst. in regard to the complaint of Mr. Brock is duly received, and we note your remarks thereon. We have called Mr. Holzer's attention to this matter and he says he will see you to-day about it. We will have Mr. Marshall make a personal investigation of this matter. The great trouble is at Paterson, that these lamps are placed on Power Looms and the vibration is something tremendous, in fact, we have had to devise a special arrangement in the socket to prevent the lamps from falling out. When the lamps were first put in they fell out at the rate of three or four per night, owing to the enormous vibration of these Power Looms. There may be something is this that causes the breakage at the point of clamping.

Yours truly,

EDISON LAMP CO.

Wkm

This detail + defect should be remedied at once as we are going for the D+M Rubber at Paterson E

Lamps

THOMAS A. EDISON, PRESIDENT. FRANCIS R. UPTON, GEN'L M'G'R AND TREAS.

EDISON LAMP CO.,

HARRISON, N.J., July 26th, 1889

Ans. July 29/89

A. O. Tate, Esq., Private Secretary,
Laboratory of T.A.Edison,
Orange, N.J.

Dear Sir:-

Mr. Deshler at the Laboratory has a number of lamp bases and sockets of the Sawyer-Man, Westinghouse, United States and other competing companies. We desire to get two of each of these as soon as possible, and should be obliged if you would give instructions to have same shipped to the writer of this letter.

Yours truly,

EDISON LAMP CO.

By Wheeleadowcroft

J. T. D. S. & Form No. 2.
10 M—11-1-87.

COMPAGNIE FRANÇAISE DU TÉLÉGRAPHE DE PARIS À NEW YORK

(FRENCH ATLANTIC CABLE CO.)

Messages Forwarded to all parts of the World.

PRINCIPAL OFFICES:

NEW YORK,
54 Broad Street.
1 Mercer Street.
11 East 14th Street.
TELEPHONE No. 809 John.

LONDON,
24 Royal Exchange, E. C.
PARIS,
63 bis Rue de Châteaudun.
BREST,
35 Rue St. Yves.

Connecting with all FOREIGN TELEGRAPH Administrations.

No. 149

AUG 26 1889

Date,

No. of Words 8

The following message is received *via French Cable* at 10 45 M. subject to the terms and conditions printed on the back hereof which are ratified and agreed to.

From Paris To: Edison

My Order three months Supply bamboo uptons

No inquiry respecting this Message can be attended to without the production of this paper. Repetitions of doubtful words should be obtained through the Company's offices, and not by *direct* application to the sender.

Imp^t

EDISON LAMP CO.,

Harrison, N. J. Oct 9 1889

Ans. Oct. 10/89.

Mr. McGuire
Edison Laboratory
Orange N. J.

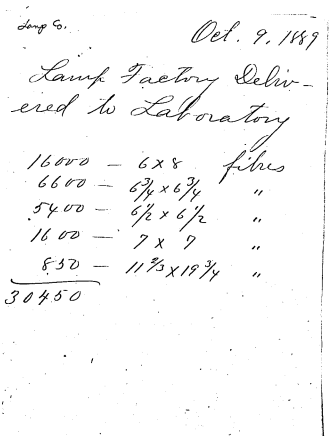
Dear Sir:-

Please count over the packages of carbons sent you by messenger to-day and sign the enclosed receipt.

Also can you find out and let me know how many, and of what size, were sent to you Oct. 2.?

Yours truly,
J. T. Marshall

[ENCLOSURE]



Lamp Co.

Oct. 9, 1889

Lamp Factory Delivered to Laboratory

16000 — 6×8 fibre
6600 — 6¾×6¾ "
5400 — 6½×6½ "
1600 — 7×7 "
850 — 11⅜×19¾ "

30450

THOMAS A. EDISON, President.

FRANCIS R. UPTON, Gen'l. M'g'r AND Treas.

EDISON LAMP CO.,

Harrison, N. J., October 16th/88 9

A. O. Tate, Esq., Secretary,

Orange, N.J.

Ans. 10/19/88

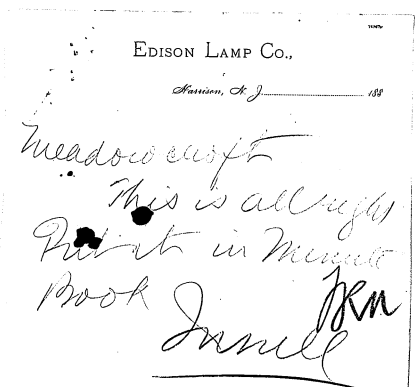
Dear Sir:-

Enclosed I beg to hand you minutes of the Meeting of the Edison Lamp Co., held at the Laboratory, July 31st. Mr. Upton desires that you write these in the minute book in due form. I will sign the Minutes some day when I am up at the Laboratory.

Yours truly,

W. Holladay Craft

[ENCLOSURE]



EDISON LAMP CO.,

Harrison, N. J. 188

Meadowcastle

This is all right

Print in Minute

Book

JRM

[ENCLOSURE]

Long Co.

1889-07-31

Minutes of a meeting of the Board of Directors of the EDISON LAMP CO. held pursuant to call of the President, at the Edison Laboratory, Orange, N.J., on Wednesday, July 31st, 1889.

Present, Thomas A. Edison,

Francis R. Upton,

Charles Batchelor,

Samuel Insull,

William Holzer.

Mr. Edison in the chair.

It was moved by Mr. Insull that Mr. W. H. Meadowcroft be appointed Secretary pro-tem. This motion was seconded by Mr. Upton and carried unanimously.

Mr. Upton moved that Mr. Samuel Insull be appointed Assistant Treasurer of the Edison Lamp Company with the same powers as the Treasurer. This motion was seconded by Mr. Batchelor put to vote, and unanimously carried.

Mr. Insull moved that the President of the Company be authorized to endorse all securities owned by the Company for purposes of transfer and sale; and that the Treasurer or Assistant Treasurer be authorized to sell or exchange such securities as he in his discretion may decide. This motion was seconded by Mr. Holzer, and on being put to vote was unanimously adopted.

On motion the meeting then adjourned, subject to the call of the Treasurer or Assistant Treasurer.

Edward A. Acheson
Alexander Graham Bell

Lamp Co.

THOMAS A. EDISON, PRESIDENT.

FRANCIS R. UPTON, GEN'L M'G'R AND TREAS.

EDISON LAMP CO.,

HARRISON, N.J., Oct. 24th, 1889

Charles Batchelor, Esq.,

Laboratory of T.A.Edison,

Orange, N.J.

Dear Sir:-

We are desirous of obtaining a small alternating current machine, and Mr. Insull said he thought you might be able to give us some information concerning same. We would be greatly obliged if you could tell us where we could find one.

We desire to try an alternating current machine in the manufacturing of lamps, as an experiment, and a second hand machine would answer our purpose. to make the trial.

Trusting that you can give us the necessary information, we remain,

Yours truly,

EDISON LAMP CO.

By F. R. Upton

General Manager.

MMm

I had an idea of making some exp.
in Ill. med & as the E Im is weeks out.
Expect to [illegible] in the meantime but I
have done nothing [illegible]

THE EDISON LAMP CO.,

East Newark, N. J., 188

When a hydrocarbon gas is passed freely through a tube which is at first cold and gradually brought to a high heat, the gas at the outlet as at first colorless, and as the temperature rises, passes successively through pale blue, white, yellow, brown, black and colorless.

Deposition begins when the gas at the outlet is changing from blue to white, and continues to deposit shiny carbon until the gas at the outlet is a deep yellow. The deposit after that is dull and coarse.

When the gas at the outlet is black, everything in the tube becomes coated with a soft dull black deposit, and when it is colorless, the whole of the carbon seems to be deposited in the form of lamp black which falls to the lower side of the tube.

When the hydrocarbon is diluted with a gas in which it does not burn, clear deposition may take place at a higher actual temperature than un-undiluted

THE EDISON LAMP CO.,

2

East Newark, N. J., ... 188...

gas but even then the color of the gas at the outlet indicates the style of deposit the same as with the uncarbonized gas.

Carbons deposited at the lowest temperature at which they will deposit, are not so good in economy as those deposited near the upper limit of clean deposition. For instance:- 110 volt carbons treated, at the lowest temperature at which deposition take place, down to 90 volts, will not be of so good economy as the same carbons treated to 90 volts, at the upper limit of clean deposition.

The higher the temperature at which deposition takes place, the more rapid will be the deposition.

Rough coarse deposit gives low volts and poor life.

The best temperature seems to be such as gives a slight yellowish tinge to the gas at the outlet.

There is no difficulty in making fine looking carbons, every time, in

THE EDISON LAMP CO.,

3

East Newark, N. J., ... 188__

any quantity.

Hydrocarbons that are not volatile at ordinary temperatures, may be used for deposition in the following way:-

Place in the bottom of an iron tube, a small quantity of the hydrocarbon:- Stove it so that the carbons:- Screw a cap on the top of the tube as tight as it is safe to have it and allow the gas formed to escape:- Then force the tube into the hot fire of a hot stove or furnace.

Or they may be used for deposition in larger quantities in the following way:- Take a large iron tube, closed at one end, and slip into it a sheet iron box divided into compartments into which the carbons are placed:- In the compartment nearest the closed end of the tube, do not put any carbons, but a small quantity of hydrocarbon:- Cork the open end of the tube and stick the closed end horizontally into the furnace. In this way paraffin,

THE EDISON LAMP CO.,

4

East Newark, N. J., 188

beeswax, camphin, linseed oil, soft coal, amber, & caoutchouc &c may be successfully used.

There seems to be no difficulty in making 16 candle lamps to give uniformly good economy and life, but the 10 candle lamps lose a large part of their deposit in the pump room.

Lamps treated in this way lose their candle-power rather faster than regulars.

All attempts have so far failed, to deposit carbons with carbon-bi-sulphide.

J. T. Marshall

1889. Electric Light - Edison United Manufacturing Company (D-89-40)

This folder contains correspondence and other documents relating to the business of the Edison United Manufacturing Co. Some of the correspondence is by Charles E. Chinnock, vice president of the company. Several of the letters pertain to problems in the installation of electric lighting plants and to sales competition in the Midwest from the Westinghouse and Thomson-Houston electric companies.

Approximately 60 percent of the documents have been filmed. The following categories of documents have not been filmed: letters of transmittal; meeting announcements; other routine business correspondence.

Related material can be found in D-89-43 (Electric Light - United Edison Manufacturing Company).

Leonard & Izard

589 - 01-04

GENERAL AGENTS THE EDISON UNITED MFG. CO.
THE CHICAGO EDISON CO.
SPECIAL AGENTS AND LICENSED CONTRACTORS FOR THE EDISON ELECTRIC LIGHT CO.

H. WARD LEONARD.
E. M. IZARD.

ELECTRICAL CONSTRUCTION AND REPAIR WORK FOR THE EDISON SYSTEM, ARC AND INCLINATE. MOTORS, STORAGE BATTERIES, ETC., A SPECIALTY.
A FULL STOCK CARRIED OF ALL SUPPLIES REQUIRED BY EDISON PLANTS.

Dic. by H.W.L.

LEONARD & IZARD,

Consulting and Contracting Electrical Engineers,

ROOM 425, "THE ROOKERY."

Address reply to .....

Chicago, Jan. 4 th., 188 9

Mr. Samuel Insull, 17 Dey ST
~~Edison Machine Works~~, NY
~~Schenectady, N.Y.~~

Dear Sir:--

When Humbird & Corton gave up their agency, we were offerred the agency we at present hold by a letter from the Edison United Manufacturing Company, signed "C.E.Chinnock, Vice-Prest.", the date of this letter being Sept. 24 th. The terms proposed were not satisfactory to usand we discussed the matter for some time by letter. We were desirious of handling all the business in our own name and buying the apparatus from the United Company. Under date of Oct. 15 th. Mr. Chinnock wrote us " Of bourse if you are ready and willing to pay for apparatus and materials as soon as you receive it, we will be perfectly willing to have the installations closed in the name of the Agents". As this was just what we wanted to do and were prepared to do, we accepted the proposition under date of Oct. 18 th. Then Mr. Chinnock under date of Oct. 22 nd. retreated from his former position and insisted that contracts should be made in their name. We replied under date of Oct. 24 th. and following, and endeavored to secure some other proposition from him which would be satisfactory; but being unable to secure any proposition which we considered a reasonable one, we declined the agency in our letter of Oct. 31 st. Finally at the request of Mr. Chinnock I went East, and between us we agreed to the terms of a contract and under date of Nov. 19 th. the Edison United Manufacturing Co. through Mr. Chinnock made us a proposition which was acceptable to us and which we formally accepted by our letter of Nov. 29 th. We enclose herewith copy of this proposition from the United Company, which we have marked "Exhibit A". A few days later Mr. Chinnock wrote us wishing to modify the letter in such a way that the renewal business in our territory would be altogether out of our hands. This we declined to do and from November on we kept writing to the United Company endeavoring to have them fill the contract made, sending them list of materials required for stock, etc. They sent us no stock of any character whatever, and involved us in a great deal of expense and trouble by delays and by not filling our orders for stock which we were depending upon, and finally when February arrived we found ourselves in a position of having thoroughly definite contract under which the United Company agreed to do certain things, and they had not filled a single one of the special agreements contained in their proposition of Nov. 19 th.

When Mr. Chinnock was out here in February at the Edison Convention, we spent a couple of days in discussing between ourselves and with Messrs. Upton, Bergmann & others, the terms of a contract between us. Finally upon Feb. 10 th. we mutually agreed with the terms of a contract. We send you a copy of this contract herewith, marked "Exhibit B" This was the third contract we had agreed to, the first one being our acceptance of their proposition to do the work in our own name and pay cash for the goods, second the acceptance of exhibit A and the third exhibit B. After everything was thoroughly agreed to, Mr. Chinnock declined to sign the contract, stating that he wished to relieve himself of responsibility as far as possible, but assured us that it would be put through exactly in accordance with exhibit B. When he got back East he sent us another contract which was entirely different in a great many vital points. This we declined to accept. The matter was under discussion for a couple of weeks and finally under date of Feb. 24 th. he sent us a proposition, a copy of which we send herewith marked "Exhibit C". This was not satisfactory and for a month more we discussed the matter by letter. Finally on March 26 th. they stated that we must either accept that contract or none, and under date of the 28 th. we sent a conditional acceptance, which he accepted as a definite acceptance of the proposition in his letter of March 30 th. This "exhibit C" is the contract we are at present operating under.

Several months ago Mr. Chinnock without cause and without any notice whatever, sent us notification that he would discontinue from that date the allowance of $333 a month. We replied denying that he had any right to do so, and notifying him that in case the $333 a month were discontinued that we should not continue as agents under the remainder of the terms of the contract. Upon Oct. 19 th. he served upon us written notice that our agency would be discontinued after ninety days from that date. Since that time, I believe no written communication has passed between us in regard to the matter other than our acknowledgement of the receipt of the notification. Therefore upon the 18 th. of this month our agency with the United Company will terminate as matters at present stand. Mr. Chinnock we believe pretends to claim that he had a verbal understanding with us that the $4,000 per year must run for only one year. We denied absolutely any such agreement having been made by us. The contract clearly states that we are to receive $333 per month. Even had any verbal agreement of the character been made, Mr. Chinnock would have deprived himself of any benefit of it by the last clause of the agreement, which he insisted upon having worded to the effect that any agreements verbal or written at variance with the above, are to be considered null and void. We wrote Mr. Chinnock a long letter detailing the various expenses incurred by us and which the allowance was intended to cover. The date of this letter was Oct. 16 th., and we enclose a copy of it herewith, marked "Exhibit D", which will give to you the arguments from our standpoint as to the necessity of such an allowance being granted by the United Company in supporting an office here in Chicago.

We beg to call your attention to the fact that the Chicago Agency of the United Company is different from any other agency in the country. Chicago is recognized as headquarters of all this Western country, and every first class concern operating throughout the country is expected to have headquarters at Chicago as well as at New York. Furthermore all supply houses carry a large stock and all goods are sold F. O. B. Chicago. In addition to this natural tendency demanding a comprehensive representation at Chicago with full stock of supplies, etc., the fact that the Western Edison Co. handled the territory immediately surrounding Chicago for a number of years and carried a full stock of all kinds of materials which the plants required and had full authority to transact any business which might be presented. This fact, as I say, makes it absolutely necessary that the United Company have in Chicago not only a full stock of all kinds of materials which can be shipped by express on short notice, but it must also have representatives with pretty broad authority to act as promptly as necessary, and it is essential that such representative by not dependent in any way upon New York for estimates, determinations and similar points of information which are required in important cases unexpectedly. All other prominent electric light companies have in Chicago a representative with practically unlimited authority, and if they lose the job upon which they are competing, it is merely because they do not wish to take it at a price which they have full authority to make but do not choose to. We, on the other hand, find ourselves with certain well defined bed rock price, which is the lowest price under any circumstances at which we can hope to secure the apparatus. The United Company has never in any case given us the slightest assistance of any character in securing any plant in our territory. We have been repeatedly assured by Mr. Chinnock of his inability to make any further reduction in price, and have therefore never made any such request except in a general way, asking for a general reduction in the price of the apparatus on the Nos. 1, 2, 3 & 4 plants. On the other hand the United Company quotes 45 o/o off list to any party in our territory who request figures, thereby making the price of the apparatus definitely fixed at 45 o/o off list. This is the maximum price we dare quote, as otherwise the United Company will underbid us, and the prospective purchaser will lose all confidence in us. Thus under existing methods, 15 o/o commission upon the price obtained by taking 45 o/o off list, is the greatest commission we can hope to make in selling Edison apparatus for the United Company. Any further profit than this which we make is made as constructors, and as the purchaser almost invariably demands a price upon the apparatus and upon the construction separately, our construction bid is in competition with other first class constructors. We therefore claim as Agents of the United Company, ~~that~~ the most we can possible make, which should be credited to the fact that we are agents of the United Company, is 15 o/o upon the price of the apparatus. The selling price of the listed apparatus is about $4.00 per lamp. The commission would therefore amount to 60 cts. per lamp in dynamo capacity. The expense of maintaining our office and employing the necessary traveling sales-

men, amount to $12,000 a year. If we sell in our territory 20,000 lamps a year, the commissions upon the apparatus sold would pay the expense of maintaining our office, but we as a firm would not have made one cent out of such commissions. In addition to the commissions, however, we receive quite a fair profit from the sale of renewal supplies in our territory, and if we were allowed to handle this renewal business absolutely and build it up as much as possible, we presume we could make the profit derived from the sale of Edison patented renewal supplies, not including lamps, net us $200 or $300 per month. With a larger territory this renewal business would of course amount to proportionally more under present arrangement. Therefore if we sell 20,000 lamps capacity per year, the commissions derived therefrom would pay the expenses of doing the business, and we would have left for ourselves as a profit in the business, all profit derived from sale of Edison patented renewal supplies, together with the allowance of $4,000 per year. Or, to put it in another way, the total expenses being $12,000, if the United Company pays $4,000 of this, we would have to sell 13,300 lamps capacity per year in order that the commissions would pay the remaining $8,000 of expense in maintaining the business. Our profit then would be the profit due to renewals and the commissions on all lamps beyond 13,000 per year. Carrying it a step farther, we claim that we would have to sell 10,000 lamps capacity per year before we could make a cent for ourselves under the present arrangement, and if we continued the agency without the $4,000, as Mr. Chinnock insisted, we would have to sell 16,000 lamps before we could net a cent to ourselves, allowing $3300 for renewal profits, which is extremely liberal and based upon futures principally. With prevailing methods, such as the Tripartite Agreement, 15 o/o Royalty in towns over 10,000, etc., it is utterly impossible to sell anything like such a number of lamps in our territory at the present discounts from the list. The various Motor Companies have an article to sell with far more advantages over existing power, both as regards convenience and cost of operation, than the incandescent light has over gas, and having but slight competition compared with that in the incandescent field, these motor companies give their agents 25 & 30 o/o commission upon the selling price. As an indication of the competition we have to meet, I enclose figures of the various companies competing for a Central Station plant at Lyons, Iowa. Our bid has a profit of about $600 in it and we have spent over $200 in endeavoring to secure the work, and have but slight hope of getting it. The Edison Company will find that unless it secures great prestige by favorable decisions in the Courts and until such time, it will be necessary to present figures within 10 o/o of the figures presented by the Westinghouse, United States, Fort Wayne Jenney & Thomson-Houston in order to secure a contract. Lyons was rather a favorable case, the distances not being very extreme. We presume we are safe in saying that in average practice the Edison bid for small cash central station which is the best field in incandescent lighting if properly worked, is fully 30 o/o higher than the bid of the Westinghouse, Thomson-Houston, United States and

S.I. 5-

Fort Wayne Jenney. In small plants our competitors, if the Edison Manufacturers statements be correct, must lose money, but they seem to be willing to do this for the sake of the renewal profits. I wrote one of our best agents who is up in the lumber mill regions in Wisconsin, a very strong letter urging that he sell Edison plants at cost if necessary rather than to get left. I enclose you herewith extracts from this letter of ours, together with his reply, which speaks for itself. We have sent to the United Company any quantity of similar letters from other agents. Our concern and all our employees are thoroughly loyal to the Edison Company, and should like to remain with it exclusively, provided we could make a fair return by so doing. But when we find it necessary to spend about half the profit on construction for the privelege of selling Edison apparatus in our territory and find plenty of construction work to be had independent of the agency, we are forced to the conclusion that if Mr. Chinnock's proposition is the best we can secure, it would be best for us not to accept it. We have made repeated requests for additional territory, as we could readily handle four or five more states from this office with no appreciable additional expense. We had hoped that next year our territory might be increased, and that the business organization of the Edison Company in the East might place us in such position that we would be able to meet the competition and do well for ourselves and the Edison Company as well. We have made a great many sales in other agents' territory. In one case we sold a plant in Montana, and after having made sale Mr. Chinnock declined to fill the order for the apparatus. We spent a good deal of money in securing the sale, which was wasted. In every instance where we have made a sale in other agents' territory we have received only one-half commission, and in one instance, the agents, Hughs & Browning, declined to give us any portion of the commission, and the only profit we made was that due to construction. The fact that no other agent has made any sale in our territory, nor that any agent ever asked us for the privelege of attempting to make such a sale, nor that any agent ever quoted figures for a plant in our territory as far as we know, tends to show that our territory has at any rate received more attention than the territory surrounding. We should like very much if it were possible to effect some arrangement by which we could represent the Edison Company under terms satisfactory to both of us, in Minnesota, Dakota, Iowa, Illinois, Wisconsin, Indiana, Michigan, Ohio & Kentucky. Dakota at present has received but little attention, and as nearly all communication with Dakota is through Chicago, Minneapolis & St. Paul, we think we are very well located to take care of this state. St. Paul & Minneapolis are the headquarters of all business in Minnesota and the Northwestern part of Wisconsin, and we have a well organized force in Minneapolis and St. Paul in charge of Mr. Andrews. We have the exclusive right to all Edison Isolated business in Minneapolis & St. Paul for a term of years by contract with the local companies. Chicago is the natural center of all business in Illinois, Indiana, Iowa, Wisconsin & Michigan, also portion of Ohio. We should like to establish a branch office in

Cincinnati representing the United Company there and also the local Edison Company at Cincinnati, who are doing practically no isolated business, although there is a large amount of isolated work being done by other companies in Cincinnati. The fact that Chicago is more convenient to Ohio parties than New York, is evidenced by the fact that we are receiving a very large number of inquiries from Edison plants in Ohio, and a good many of them, Central Station Plants, who would deal with us in preference to New York, although they realize that New York is headquarters of business. Upon the 18 th. of this month unless we have assurance of some satisfactory arrangement being made, we shall expect to be relieved by some representative of the United Company. We hope to meet with sufficient encouragement to enable us to remain in neutral attitude of all companies, doing work for all and shall not make any arrangement with any one special company unless we secure marked advantages thereby. If the United Company will send a first class manager to handle the sales and give us the construction work for this section of the country for the Edison business provided our prices are reasonable, we can state positively that we will make no arrangement to represent any interest antagonistic to the Edison, but shall expect to do construction work for any or all. Such a position on our part will tend to bring the competition down to first cost of apparatus and individual superiorty of the different systems. Thomson-Houston, and the Westinghouse Companies and others of lesser importance, have assured us of their willingness to have us act in such capacity, doing construction for all and have promised us all work which the price would warrant them in giving us.

We shall hope that such an arrangement will be satisfactory to the United Company, and if not, that some arrangement may be made by which we may continue to act as agents for the United Company.

Yours very truly,

Leonard & Izard.

per Albert Izard

P.S. Also Enclose Exhibit "J" just made from Brown showing price of Brush plants.

[ENCLOSURE]

Copy. Exhibit "A"

The Edison United Manufacturing Co.

New York, November 19, 1887.

Messrs. Leonard & Izard.

185 Dearborn St., Chicago, Ills.

Dear Sirs:--

The following concessions, in connection with our circular letter of the 24th of September, covering agencies of this company, are allowed:

First, We will allow $4,000 per annum to be used for the salary and expenses of one or more competent persons to travel in your territory and devote his time exclusively to the Edison interests to drum up orders, said traveling agent, or agents, to be under control or yourselves. It is understood that this special traveling agent is not to devote his time to closing of contracts except when this can be done without interfering with the main object of his drumming up of the business.

Second, We will furnish on consignment, a sufficient amount of stock to properly supply the demands of the business in your territory and pay one-half of the expenses, subject to approval, of the store-room in the shape of salaries and rental. All profits derived from the sale of this material for any business other than original installation to be divided so that you shall receive two-thirds and ourselves one-third of such profits. The net cost of such division of profits being what is known as shop prices, that is, the lowest price (copy of which you have) made to central station companies owning the Edison Franchise. A separate account must be kept subject to inspection by this Company.

Third, All contracts are to be made on form mutually agreed upon between this Company and yourselves.

Fourth, This company will furnish you with power of attorney, revokable upon notice of thirty days, so that you can collect all accounts for this company and deposit in the name of the Company and forward to us the proportion belonging to us.

Fifth, It is further understood that all orders for renewals of every description will be forwarded to you and customers in your territory are to be requested to order direct from you.

Sixth, Copies of contracts are to be kept on file in your office in Chicago and at our request copies of same will be forwarded to us. Of course it is understood that the name of the customer and whether it is a central station on the cash basis of an isolated plant, must accompany the order.

[ENCLOSURE]

Seventh, You to have the exclusive right to settle all disputed claims and the proportion of the amount collected to be allotted pro rata and upon notice of thirty days, we to have the right to recall above in any particular instance.

Eighth, It is agreed that all patented materials manufactured by the shops, required for plants sold in your territory, are to be ordered from this company.

Ninth, In case you sell, in one year, (in your territory, or outside of it with approval) more than 8,000 lamps, figured on the lamp capacity of the dynamos sold, you to be allowed, on all purchases from us beyond that, an additional seven and one-half per cent in addition to the regular discounts. This to cover renewal supplies as well as for original installations.

Truly yours,
The Edison United Manufacturing Co.
by
C. E. Chinnock,
Vice-President.

[ENCLOSURE]

"Exhibit "B" Copy.

Chicago, Feb. 10 th., 1888.

Messrs. Leonard & Izard.
Chicago,

Gentlemen:

Referring to the agreements at present in force between us, by virtue of our two letters of Sept. 24 th. 1887 and our letter of Nov. 19 th. 1887, under which you represent us in Wisconsin, Iowa except in Council Bluffs, and in Illinois except in that portion south of a parrallel through St. Louis, we now make you the following proposition to take the place of our letter of concessions of Nov. 19 th. 1887. In case that any clause of the present letter is in conflict with the letters of Sept. 24 th., the present letter to be considered the ruling one.

First, we will allow you $4,000 per annum to be used in the payment of salaries and expenses of traveling agents in your territory. You to forward to us monthly vouchers covering such salaries and expenses, when we will return to you a check in settlement of the same; said checks to be made payable to the agents themselves. We hereby authorize you to withhold any such check from any agent in your employ until he has settled with you any amounts due you from him.

Otherwise than receiving such payments direct from us, said agents to be in every way entirely in your control, and we hereby agree not to interfere in any way with such control.

All contracts are to be made on forms mutually agreed upon between this company and yourselves; but we hereby agree not to alter such forms in such a way as to increase the expense of installing the plant, or to increase the obligations of the purchaser beyond those which are contained in the existing forms, without your consent.

It is understood that all payments on account of plants installed by you under contracts closed in our name shall be sent to you, and that we will not do anything to encourage the sending of such contracts direct to us. When such check is received by you, you are to send it forward to us, drawing on us at sight for that proportion of the check due you. We to pay the expenses of such drafts, etc.

Copies of contracts are to be kept on file in your office in Chicago and whenever a copy of any particular contract is requested by us, you are to send same to us promptly.

It is understood that the name of the purchaser, whether it is a cash central station or an isolated plant, the contract price, and such salient points relative to the contract, are to be sent to us whenever you order ~~you order~~ the apparatus for a plant.

You to have the exclusive right to settle all disputed claims between yourselves and purchasers of Edison apparatus.

We agree that we will not in any way interfere with such settlement of disputes between yourselves and the purchasers except after 30 days' notice to you to that effect.

It is understood that we are to carry a stock of all such supplies

[ENCLOSURE]

for renewals as will enable you to meet the demands of customers in your territory. Lamps and armatures to be accepted from such supplies. We agree to carry for the plants in your territory one armature of each kind required to supply the demand of your territory, you to keep such armatures in good repair without further expense to us. In case you desire to purchase armatures to carry for renewals, they are to be furnished to you at the same prices as other renewal supplies.

It is understood that orders for renewals of every description in your territory are to be sent to you, and we agree to not furnish any supplies in your territory at a price less than the consumer has been paying for such supplies previously, and that in case we fill any such order we are to bill the same to you at fifteen (15) per cent advance above net cost to us; and that you bill the goods to the consumer; lamps to be excepted from this. In the case of lamps, we agree to divide equally with you all profits derived from the sale of lamps of all kinds in your territory.

All supplies for renewals are to be furnished to you at 10 o/o above the actual net cost of same to us, you to receive the benefit of any reduction in prices to us upon any goods. Such supplies for renewals purchased from us by you, to be settled for monthly by a nine (9) months' note without interest.

It is agreed that you are to represent us exclusively for the sale of all such supplies and apparatus as we control; and in case that any party infringes such right of yours, we will protect you in your rights as far as we are able to.

It is agreed that all Edison patented materials required for plants in your territory are to be ordered from this company. In case you purchase from us in any one year installation supplies either for your territory or outside of it, with our approval, for more than 8,000 lamps, based upon the lamp capacity of dynamos by the present list, you to be allowed on all purchases from us beyond that in said year, and required for three months from date of purchase, an additional seven & one-half per cent beyond the regular discount. This is to cover renewal supplies as well as those for original installations.

In case that for any reason we desire to annul this contract, we agree to give you three (3) months' notice of the same in order that you may be able to reduce your stock of supplies and arrange your business so that you may suffer the least loss possible incident to the annulling of said contract. Similarly, you are to give us three months' notice in case you wish to annul this contract at any time.

[ENCLOSURE]

Copy. The Edison United Manufacturing Company.

Exhibit "C"

New York, Feb. 24 th., 1888.

Messrs. Leonard & Izard.
185 Dearborn St., Chicago, Ills.

Gentlemen:--

With the understanding that you accept the terms, conditions and obligations as laid down in our circular letter of Sept 24 th., 1887, governing agencies, except such portions as conflict with the following concessions, this company hereby agrees to appoint you agents for the states of Wisconsin, Iowa, with the exception of Council Bluffs, and Illinois, excepting that portion south of a parallel through St. Louis.

First, We will allow you $333.33 per month to be used in the payment of salaries and expenses of travelling agents in your territory. You to forward to us monthly vouchers covering such salaries and expenses and also a report, giving in detail the territory canvassed, when we will return to you a check on settlement of same, said checks to be made payable to the agents themselves. We hereby authorize to withhold such check from any agent in your employ, until he has settled with you any accounts due you from him. These agents are to be under your direct control.

Second, All contracts are to be on forms mutually agreed upon between yourselves and this company, but no central station on the cash basis is to be sold unless a contract, prepared and approved by the Edison Electric Light Company and forwarded to you by this company, is properly signed and executed; but we hereby agree not to alter such forms in such way as to increase the expense of installing plants or to increase the obligations of the purchaser beyond those that are contained in the existing forms, without it being mutually agreed to.

Third, It is understood that all payments on account of plants installed by you under contract closed in our name, shall be sent to you and that we will not do anything to encourage the sending of such payments direct to us. When such check is received by you, you are to send it forward to us, drawing on us at sight for your proportion of the amount due you, we to pay the expense of such drafts.

Fourth, Copies of all contracts are to be kept on file at your office in Chicago, and when copy of any particular contract is required by us, you are to send same to us promptly; however all orders forwarded to us must be accompanied by an abstract, giving the name of the purchaser, whether it is a cash central station or an isolated plant, the contract price and such salient points relative to the contract as are necessary for us to receive in order to have a comprehensive list of all installations made or about to be made.

Fifth,

Your are to have the exclusive right to settle all disputed

[ENCLOSURE]

claims between yourselves and the purchaser of Edison apparatus, we agreeing that we will in no way interfere with such settlement of disputes between yourselves and the purchaser, except after thirty days notice to you to that effect.

Sixth, It is understood that you will carry a stock of such supplies for renewal purposes as will enable you to meet the demands of customers in your territory, lamps and armatures to be excluded from such supplies. We agree to carry, for the plants in your territory, one armature of each of the new type of dynamos, required to supply the demand in your territory, you to keep such armatures in good repair without further expense to us, it being understood, however, that you forward to this company, at least once a month, a list giving in detail where these armatures are in use.

Seventh, All supplies for renewals are to be furnished to you at 10 o/o above actual net cost of same to us, you to receive the benefit of any reduction in price to us; such supplies for renewals purchased from us by you to be settled for monthly by nine months notes, without interest. When orders for renewals are forwarded to this Company direct by the purchaser, we agree to bill the same direct to the customer and credit you with the difference between 15 o/o advance on cost and the price received for the renewals, we agreeing, of course, not to solicit orders nor in any way to interfere with your exclusive rights in the territory allotted you under our circular letter. In the above, renewal lamps are excepted, and if you wish to participate in the profits of the same, we agree to divide with you all profits on the renewal lamps, providing the expense of carrying on such portion of our business is borne equally by yourselves and this Company; the maximum amount of profit allowed this Company being four cents per lamp.

Eighth, It is agreed that all Edison patented material for central stations on the cash basis, or isolated plants, in your territory, is to be ordered from this Company. In case you purchase from us in any one year installation supplies, either for your territory or outside of it, when such sale is made by you with our approval, for more than 8,000 lamps, based upon the lamp capacity for dynamos by the present list, you to be allowed on all purchases from us beyond that in said year, and required for three months from date of purchase, an additional seven and one-half per cent beyond the regular discount. This is to cover renewal supplies as well as those for original installations.

This letter to bear even date with our settlement of January 1 st. 1888, and accepted with the statement that any agreements, verbal or written, at variance with the above, are to be considered null and void, it being understood that the basis of the above concessions is the circular letter of Sept. 24 th., 1887 and price-list accompanying same.

Truly yours,

(Signed) The Edison United Manufacturing Co.
by C. E. Chinnock, V. P.

[ENCLOSURE]

Exhibit "D" Copy.

Chicago, Oct. 16 th., 1888.

Mr. C. E. Chinnock,

Vice-Prest. Edison United Manufacturing Co.,

65 Fifth Ave., New York City, N.Y.

Dear Sir:--

We are in receipt of letter of Oct. 11 th. notifying us that you will not continue the allowance of $4,000 per annum after Nov. 19 th.

You claim that our contract was for one year. We cannot grant this. There is nothing in our contract which in any way fixes the time it is to run. You cannot discontinue the allowance without cancelling the contract, and we expect reasonable notice in case you wish to cancel our agency. As long as we represent you under existing contract in any way, we shall expect the allowance, for if we represent you at all, it will be under that contract, and you have no right to alter any portion of it except by mutual consent or by cancelling it altogether. Therefore we shall claim the allowance until we mutually agree to its discontinuance or until we cease to be your agents after three months' notification. The above is our position, and we now wish to say a few things to show that you are operating this Agency very cheaply at present and that we are justified in expecting the allowance and in fact a much larger one.

In the first place we represent no other electric light of any kind and do no work for any system other than the Edison, though frequently urged to. We have five traveling agents all of whom have their expenses paid and receive a salary of $75 to $100, and in addition receive a commission. The salaries alone of these agents amount to $400 per month, and the expense average, $120 per month or $600 per month. That is, out of a total expense of $1,000 per month, you are paying $333 and we $666, or just twice as much as you. Our rent is $220 per month. Our office salaries entirely outside of ourselves, amount to $300.65 Our store-room salaries amount to $201. 58. Our Testing-room salaries are $100 per month. Our incidental expense connected with the business averages $98.00 per Mo.

That is, the fixed charges of operating your agency whether we do any business or not, amount to $1920.23. This, as you see, includes nothing for our own time. Even supposing it worth only $333 per month, you are operating an important agency for $333 per Mo., and in addition to this $333, we are paying out $1920.00 whether we do any business or not.

Thus far we have probably lost money by acting as your agents, but we have been sowing the seed for a large harvest, and it is manifestly unfair that you should force into a position where we must either

[ENCLOSURE]

spend $4,000 per year more,or else sacrifice what we have expended and let you receive all the benefit of it. But if after knowing all the facts,you still insist on our taking our choice of these two,we shall certainly take the latter,and charge our loss to misplaced confidence.

We have just closed contract with the Minneapolis Company by which we handle all their isolated business for two years,and shall establish a fine office in the Lumber Exchange,with our Mr. Andrews in charge of that office. This will be a decided benefit to your business in Wisconsin & Minnesota.

We wish to continue operating exclusively with the Edison Company, and we trust that you will not cancel our contract. If you will take the trouble to come out here,you will return convinced that the allowance is just,moderate and that it has been well used. The trouble is you are not posted about the situation here,and never will be by correspondence.

From Oct. 18 th. 1887 to Aug. 18 th.,1888 (10 months) we paid you $24081.87,or a rate of$28,896.00 per year. If you will give us 10 o/o discount from present prices, excepting renewal lamps, we will accept this in lieu of the present allowance. In that case, if we did little or no business we would sustain all the direct loss,and we would have to increase our sales 50 per cent in order to get an amount equal to present allowance. We have bought more supplies from you than the Western Edison Company ever bought in same period,omitting lamps, and yet we have ordered nothing for Chicago proper, which used to furnish at least half their business. Under this latter proposition you risk absolutely nothing,and we risk everything.

Remember that you have not been bothered by any troubles of any character with plants in our territory. Youhave billed the goods to us as though they were coal or iron, and have never had to look outside of x us for any collection. You have made absolutely no bad debts. You are dealing with practically one concern,and that a responsible one. We are the ones who stand the disputes, complaints and financial losses. The plants are constructed as well,if not better, than any in the country, and will always be a credit to you,and the amount of business we do is as much as any one could do,and is rapidly increasing. All these considerations are valuable ones,and we hope you will weigh them carefully before cancelling our contract.

Yours very truly,

Leonard & Izard.

Per H. Ward Leonard.

[ENCLOSURE]

Figures from propositions on incandescent plant received by City of Lyons, Iowa.

Exhibit "8" Jan 1/09

	Thomson-Houston Co. Alternating.	E.W.Jenney Alternating.	U. S. Co. Alternating.	Westinghouse Alternating	Edison. 2- 6's
Dynamo capacity 16 C. P.	500	600	500	500	500
Conductors	500	600	500	1000	800
Converters for	500	500	500	500	
No. of 16 C.P. lamps	500	500	500	500	500
No. of sockets	500	500	500	500	500
Guaranteed lamp life in hours	800	600	600	800	600
Price 16 C. P. lamps for renewals	75¢	75¢	75¢	Less 3¢ if butts returned 56¢	85¢
Loss in efficiency in conductors guaranteed not to exceed	5 o/o	5 o/o	5 o/o	3 o/o	8 o/o
Guaranteed lamps per H.P. in engine	8	10	----	12	12
Lampsw wired for inside cleat work	500	500	500	500	500
Contract price	$5246.	$5678.	$4950.	$6781.	$7358.50
Terms- days after plant starts	60	60	60	60	

Westinghouse Company agreed to furnish them all the switches wanted free of charge.

There were 15,1/4 miles of wire in our system. Poles ~~line~~ furnished by the purchaser.

[ENCLOSURE]

Exhibit "F"

Extract from letter to Mr. Pierce. Dec 26th

Mr. R. H. Pierce,

Green Bay, Wis.

Dear Sir:--

"I should be willing, however, to sell at absolute cost if necessary for the present, in order to try to make a fair showing to the Edison people. Please bear this in mind and endeavor in every way possible to secure all the Edison business you can in the immediate future."

Yours very truly,

(Signed)

Leonard & Izard.

per H.W.L. M

[ENCLOSURE]

Extract of Mr. Pierce's letter.

Dec. 31 st.,1888.

Leonard & Izard.

Gentlemen:--

Yours of the 26 th. at hand. Your remarks concerning the Edison business noted. As to the small isolated business, I have discussed that with you already. Unless I can catch a man without competition I can get no price in this territory,as other Cos. bid below the net cost to us. The economy of the lamps cuts no figure except as it affects price,and the life of lamps is not much considered, as we guarantee no more than others. I have spent a large amount of time and money on this work already, but I do not believe there is much money in selling at cost and spending $10 to $20 a trip for several trips to try to sell a plant in a saw mill. If I am extreme in my opinion I cannot help it. You have seen letters stating that the Edison was preferred and would be used at any where near the same price. And after cutting the profit to less than the expenses,we have failed to secure the jobs. I am doing all I can at Kaukauna and the prospect is fine. Am working on De Pere also. Antigo is also a matter of the way they will raise the money. I hope to put in some Edison work soon, but if little business is done by us in this country,the Edison people can thank themselves cheerfully for it. Let them try to work this territory and let us take some other system and they will find out what is what. I am just as much stuck on the Edison business as ever, but for saw mills the other people can at least

[ENCLOSURE]

knock all the money out of the business."

Yours very truly,

(Signed) R. H. Pierce.

[ENCLOSURE]

Exhibit "G"

Extract from Mr. Brown's letter, Jan. 4 th., '89.

" The Milwaukee Bridge & Iron Works purchased a Brush Plant. The Moore Mfg. Fdy. Co. have done same. The Brush Co's bid for the plant was about $600.00; our bid was $800.00. It would be easier for us to make some sales of small size dynamos, if we could compete with the Brush Co., and one or two others in price.

In the case of the Milwaukee Bridge Co's plant, my figures for cost were about $740.00; how they cannot supply it for $600.00 I cannot see. It was a No. 2 plant (90 lbs). "

EUMC

The Edison United Manufacturing Company,

65 Fifth Avenue,

In replying please address "THE EDISON UNITED MFG. CO."

NEW YORK, January 9th 1889.

Mr. John Burke

24 South William st

City.

Dear Sir,

Herewith we beg to hand you statement of a/c showing balance due us of $614.53 and being desirous to close the account we trust you will favor us with your check for same by return mail.

Yours truly,

THE EDISON UNITED M'F'G CO.,

Per ..... AUDITOR.

Rec'd.

[ENCLOSURE]

E. U. M. C.

[Form 16.] Folio 2/162

MONTHLY STATEMENT.

New York, JAN 1 1889 188

Mr. John Burke

24 So. Wm St. City.

To The Edison United Manufacturing Co., Dr.

Terms Cash.

NO. 65 FIFTH AVENUE.

1888 Dec	1	To Balance Rendered,		$	614 53
		To Misc.,			

C U/C

The Edison United Manufacturing Company,

65 Fifth Avenue,

ENGINEERING DEPARTMENT.

NEW YORK, ~~Jan. 11th, 1889.~~

Jan 17/89

I Say Rept. Read
soon as practicable
would please
to take as
good proof
& Explain

Thomas A. Edison, Esq.,

Llewellyn Park,

Orange, N. J.

Dear Sir:--

At Mr. Chinnock's suggestion, I enclose you herewith a copy of the report of a test we have recently made on an Edison plant we installed at Buffalo, in a large dry goods store there. The architect, as well as his expert representative, when we started in were both strong United States men; but as a result of the installation of this plant, and the test thereof, we can confidently say that they have been converted to the advantages and superiority of the Edison system. I think the report has some data of quite recent date, that will no doubt prove of interest to you, particularly in regard to the use of compound dynamos in multiple arc, and also their regulation, and the results of tests in regard to lamps fulfilling the guarantee made for them.

If you have time at any time, and I am not troubling you too much, I would be glad to receive an expression of opinion from you in regard to it.

Yours very truly,

C. J. Field.

Chief Engineer.

Form 8K E.U.M.C

The Edison United Manufacturing Company,

65 Fifth Avenue,

In replying please address "THE EDISON UNITED MFG. CO." Dictated.

NEW YORK, Jan. 16th, 1889.

WESTERN DEPARTMENT.

Mr.A.O.Tate,

care Laboratory of Mr.T.A.Edison,

Orange, N. J.

Dear Sir:--

We are in receipt of your favor of Jan.15th regarding the underground system of Mr.Burke. In reply would state that we have sent our Mr.Varlick to see Mr. Kennelly in reference to this matter, and trust he will be able to make it satisfactory to him.

Yours very truly,

Chas J Kleeg Supt.

Sub - Comm'l

Edison United Mfg Co Jan 31 1889

January 30, 1889.

M r. K e n n e l l y,-

Is the United Company doing anything in regard to Burke's installation?

A. O. Tate.

M.

Mr Tate

I have had no communication with the United Co since the occasion you will remember some few days ago when their man came out to enquire into the matter just after your letter to them

Yours very truly

A. E. Kennelly.

FUNC

(COPY)

The Edison United Manufacturing Co.
65 Fifth Avenue.
New York, Feb. 1, 1889.

W.M. Laffan, Esq., Manager,
N.Y. Sun, Park Row, City.

Dear Sir:-

You have now been using the Edison lamps for a period sufficiently long to enable you to determine whether or no our representations, made to you, to induce you to replace the Sawyer-Mann lamp with ours, were correct.

As you will readily see, having used these lamps from the time we equipped your entire plant, they have had a life of over one thousand hours and we understand less than ten per cent of the number originally installed by us have actually burned out, therefore you have undoubtedly made an economical change.

Will you kindly advise us if our statements, as above, are correct. and oblige,

Very truly yours,
The Edison United Mnfg. Co.

THE SUN.

New York, Feb. 5th 1889.

Edison United Mnfg. Co.
New York, N.Y.

Dear Sirs:-

Replying to your inquiry of the 1st concerning the Edison lamps with which we have recently equipped our building, and which have now been in use for nearly two months, we would say that so far they have justified all you claimed for them, and although the first cost may be a little more than those we formerly used, the longer life makes them cheaper in the end.

Very truly,
W.M. Laffan,
Manager.

EUMC

The Edison United Manufacturing Company,

65 Fifth Avenue,

In replying please address "The Edison United Mfg. Co."

Dictated.

NEW YORK, Feb. 5th, 1888. 188

BILLING DEPARTMENT.

Mr.A.O.Tate,

Private Sec.

Edison's Laboratory,

Orange, N.J.

Dear Sir:--We have your letter of Jan. 31st regarding the outside wiring at Mr. Burke's. As this was bought at the time of the Edison Wiring Co. and the agreement with Mr.Burke was that lead covered wire was to be used, we have done the best we could, and laid it in a trough. I think the trouble lies in the wire itself, and do not think we ought to be made to bear the entire expense of laying new cable.

What do you think of the advisability of asking Mr. Burke to bear with us to fix this right? Or could your electricians figure what will be required in Edison tubes to take the place of this underground wiring, and how much it will cost? We did not make any money at this part of the plant, as it was done for Mr.Burke at cost, charging him for material and time put in.

Awaiting your reply, we remain,

Yours very truly,

Supt.

Form 88 C U M Co

From WIRING DEPARTMENT.
Edison United M'f'g Co.,
65 Fifth Avenue,
New York, Feb. 21st, 1889. 18

To Mr. A. O. Pate,
care Edison's Laboratory,
Orange, N. J.

Dictated.

Dear Sir:--

Will you kindly send us a number of samples of the wire which has been taken out from the wiring system of John Burke, as we would like to bring the matter up to the Standard Underground Cable Co. and get some satisfaction from them.

I should like also to have your electrician's opinion as to the cause of this wire giving out as it apparently has.

Yours very truly,

Supt.

EUMC.

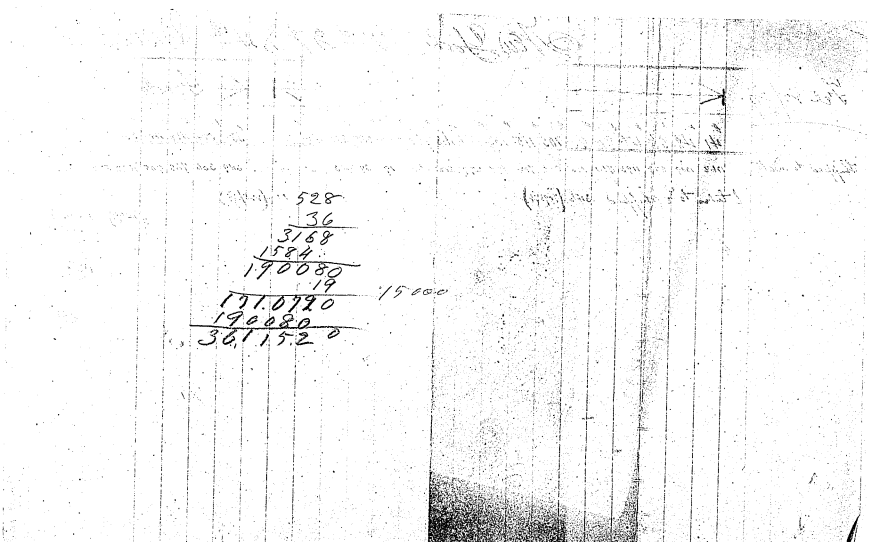
New York 2nd 3rd & 4th Districts

Feb 27/89

Mauve

Feather

	£41	£48	£56	£67	£80	£90	£105	£115	£133	£144	£168	£180	£206	£258	£350	£400	£500	£550	£500	£450	£400	£350	£300	£250
Shipped to Date	1068	1219	878	1193	761	835	800	712	797	279	312	568	19	37	43	23	12	649	306	768	905	1638	573	580
Total amount of Entries to Date						3126 (1791½ lb)											11 (22½ lb)						12 (24 lb)	95 (190½ lb)


528
36
3168
1584
190080
19
1710720
190080
3611520
15000

E U M C

THE EDISON UNITED MANUFACTURING COMPANY,
OF NEW YORK.

A. H. REECE, AGT.,
40 TURNER BUILDING.
TELEPHONE 498.

ST. LOUIS, Feb 27 1889

My dear Hart.

Has anything new turned up in the east.

Business here is getting very dull indeed. I am afraid the Odd Fellows Hall people will decide not to put in an isolated plant, but connect to the Westinghouse Central Station. The City Lids will open tomorrow and as a consequence all the Electric people are here. Pantzlerini says positively that his people will not bid, or have not. There is, I am inclined to think, dissension among them as the business does not look so rosy as it once did. I suppose you know that in the reorganization of the U.S. Office in Chicago that C. C. Warren was laid on the shelf, and is now with the Thomson & Houston

Edison & Keith's Office

THE EDISON UNITED MANUFACTURING COMPANY,
OF NEW YORK.

A. H. REECE, AGT.
40 TURNER BUILDING.
TELEPHONE 439.

ST. LOUIS, _____ 188

Courtney. Shamin has been placed in the Cincinnati office with Tennessee, Ohio & Virginia Dunn at. Che Mrs H. W. Fairbanks Takes Mr Warrens place, So the world rewns and it seems the alternating current wins the day.

Mrs H. F. Porter is at last a Father the new addition arriving this A.M. in the shape of a young son.

Yours Truly,
A. H. Reece

Reece — Look at this. 6 months
Reece

E. M. J.

EUMC

The Edison United Manufacturing Company,

65 Fifth Avenue,

ENGINEERING DEPARTMENT.

NEW YORK, March 5, 1889.

A. O. Tate Esq.,

Orange, N. J.

Dear Sir:-

Enclosed you will find a letter directed to Mr. Edison, which I have written at the suggestion of Mr. Chinnock. Will you kindly present this matter to Mr. Edison at once, so that we may loose no time in the matter, it being an important installation and a large one.

Yours truly,

THE EDISON UNITED MFG. CO.

By W. H. Meadowcroft

[ENCLOSURE]

EUMC

The Edison United Manufacturing Company,
65 Fifth Avenue,

ENGINEERING DEPARTMENT. NEW YORK, March 5, 1889.

Thomas A. Edison, Esq.,
Orange, N. J.

Use ~~6~~ Six Thousand Volts. 1500 Volts on each Dynamo + 4 Receiving motors all Belted to one Countershaft.

Dear Sir:-

We are asked to make an estimate on a plant for transmitting 500 horse power 20 miles, to be delivered in the Mines of the Comstock. It is proposed to furnish a Company with a half of a million dollars capital to put in this plant.

We have figured on putting in dynamos of 1250 volts, running two in series so as to have 2500 volts at the generating end. We have figured on a loss of 20% in the line, and a loss in the motors of 20%. With this arrangement, there would be required for the line 40 miles of copper rod one inch in diameter which would cost, say, $176,000.00 This of course is a large investment but the whole plant would certainly come within the proposed capitalization.

As this is a very important plant, and we are going to make a special effort to get it, we write to you to ask if you think the above is the best arrangement in your opinion to carry out this purpose. If it is not, will you kindly indicate what would be the best, and we think that if you were to write us in such a way that we could show the letter out there, and your recommendation would carry with it a strong probability of selling the plant.

We regret to trouble you on a matter of this kind, but we think its magnitude will interest you and be our excuse for troubling you.

Yours truly,

THE EDISON UNITED MFG CO.

By Wm Holladowcroft

Form 10. EUMC

The Edison United Manufacturing Company,

65 Fifth Avenue,

In replying please address
"THE EDISON UNITED MFG. CO."

NEW YORK, March 9, 1880.

A. O. Tate, Esq., private secty.,

T. A. Edison, Esq., Llewellyn Park,

Orange, New Jersey.

Dear Sir:--

I have carefully gone over the correspondence re the giving out of the underground conductors for Mr. Burke's house. We are in receipt of a communication from the Standard Underground Cable Company, stating that the trouble is caused by chemical action and that they refuse to make good their bad work. You are well aware that we assumed the liabilities, as well as the assets of the Edison Wiring Company , as your letteringlies, consequently I feel that we are compelled to make good the underground work, and with that end in view, we accept your offer on behalf of Mr. Edison to substitute Edison tubes at a cost not to exceed One Thousand Dollars ($1,000.).

The installation being so near you, and they, of course, will insist upon calling on you to make any repairs , I believe the better way would be for you to assume all responsibility in connection with the change for a sum not to exceed the amount named above.

Trusting you will forward me an acceptance of this proposition with any further information that you consider necessary, I remain,

Truly yours,

Vice President.

Form(D) EUM C

The Edison United Manufacturing Company,

65 Fifth Avenue,

In replying please address
"THE EDISON UNITED MFG. CO."

NEW YORK, March 15, 1889.

A. O. Tate, Esq.,
Llewellyn Park, Orange, N. J.

Answ. 20/3/89

Dear Sir:--

Your favor of the 14th inst at hand. In answer beg to state that I regret misunderstanding your communication. Please bear in mind that we have no one who thoroughly understands the underground system and we do so little of it that we have not considered it necessary to have a sufficient force to handle the underground system even on a small scale.

You are right in supposing that I realize the necessity of satisfying a customer and, with that idea in view, have forwarded a communication to The Edison Machine Works, asking them to send a competent man to consult with Mr. Kennelly with a view of handing us an estimate for the underground conductors required to make Mr. Burke's installation satisfactory.

On receipt of their bid you can rest assured the matter will receive prompt attention. Believing this will be satisfactory, I remain,

Truly yours,

Vice President.

[FROM CHARLES E. CHINNOCK]

Form 21. EUMC

The Edison United Manufacturing Company.

65 Fifth Avenue,

In replying please address "The Edison United Mfg. Co."

NEW YORK, April 5, 1880.

My Dear Tate,

Per with I please find my explanatory memorandum re the installation of an electric light plant for Mr. Joseph Storm. Kindly read and if necessary inform Mr. Edison, and return.

Truly yours,

[ENCLOSURE]

EDISON
Cable Address
"Edison, New York"

From the Laboratory
of
Thomas A. Edison.

Orange, N.J. March 29, 80. 188

C. E. Chinnock, Esq.,
The Edison United M'f'g. Co.,
New York City.

The Edison United Mfg. Co.
RECEIVED
MAR 30 1880
No. 2777

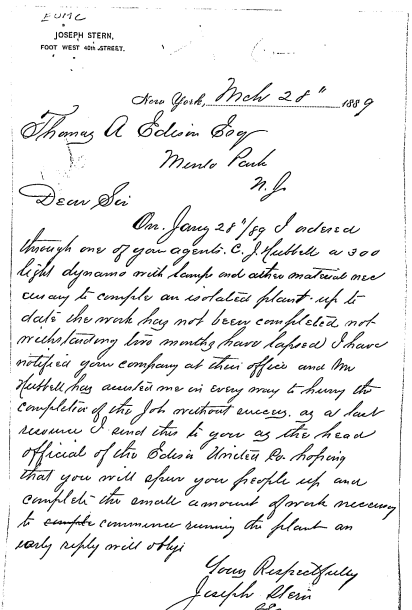
Dear Sir:-

I beg to refer to you the enclosed letter which I have received from Mr. Joseph Stern, New York City, relative to delay in installing an electric lighting plant on his premises.

Yours truly,

T. A. Edison

[ENCLOSURE]



EDMC

JOSEPH STERN,
FOOT WEST 40th STREET.

New York, March 28th 1889

Thomas A Edison Esq
Menlo Park
N.J.

Dear Sir

On. January 28th/89 I ordered through one of your agents. C. J. Hubbell a 300 light dynamo with lamps and other materials necessary to complete an isolated plant. up to date the work has not been completed. notwithstanding two months have lapsed. I have notified your company at their office and Mr Hubbell has assured me in every way to hurry the completion of the Job. without success. as a last resource I send this to you as the head official of the Edison United Co. hoping that you will spur your people up and complete the small amount of work necessary to complete. commence running the plant. an early reply will oblige

Yours Respectfully
Joseph Stern
&c

[ENCLOSURE]

EUMC

Mr. Chinnock,

In regard to the Joseph Storm plant, I would say this plant is one that was secured by Mr. Hubbell after it had been virtually promised to Mr. MacLean. Mr. Storm had in his possession at the time an estimate from Mr. MacLean and in all probability Mr. Hubbell was aware of it and he secured the order by cutting. Since the order was secured and goods ordered there has been some influence at work with Mr. Cochrane to render him very much dissatisfied with the treatment he had received from this Company. While I do not wish to accuse Mr. Hubbell of anything of that nature, the fact that Mr. Storm has addressed a letter to Mr. Edison is to my mind prima facie evidence that Mr. Hubbell has been instrumental, to a certain extent, in causing the dissatisfaction on the part of Mr. Storm. I would state that Mr. Storm's complaint is entirely unfounded, inasmuch as the order for shafting was given to the Edison Machine Works and a delay of three weeks was caused thereby. The belts were ordered by Mr Klein and were not of the manufacture that contract called for. However, as I now understand it, everything is satisfactory and plant is now running.

W A Willard,

April 1, 1899,

EUMC

Mr. Willard,

Please give me a detailed report, showing the reason for delay in the plant sold to Joseph Storm. By the way it is the order that Mr. MacLean secured, or worked up, and Mr. Hubbell, without notifying us, closed it by cutting the figures.

C E Chinnock.

March 30, 1899,

EUMC

Form 19.

The Edison United Manufacturing Company,

65 Fifth Avenue,

In replying please address
"The Edison United Mfg. Co."

NEW YORK, April 11, 1889.

Thomas A. Edison, Esq., President,
The Edison United Manufacturing Co.,
Llewellyn Park, Orange, New Jersey.

Dear Sir:--

Notwithstanding the fact that you are exceedingly busy, I consider the enclosed correspondence of sufficient importance to lay before you.

I am compelled to admit that in my opinion Messrs. Leonard & Izard have not exaggerated the state of affairs in the West.

I am in possession of proof, about which there can be no doubt, showing conclusively that the Westinghouse and Thompson-Houston Companies receive $9,000. for a 2500 light alternating dynamo, without lamps, sockets or converters. This is simply startling.

From my observations I feel quite positive that we are not receiving one-quarter of the business we should, although our sales amount to more than last year.

Truly yours,

Vice President.

Form 24. EUMC

The Edison United Manufacturing Company,

65 Fifth Avenue,

In replying please address "THE EDISON UNITED MFG. CO." CONSTRUCTION DEPARTMENT. Dictated.

NEW YORK, April 12th, 1889.

Mr. A. O. Tate,

Private Sect. T. A. Edison, Esq.,

Orange, N.J.

Dear Sir: --

Your letter regarding the underground work at the residence of Mr. John Burke is received. In reply we beg to say that we have notified the Edison Machine Works to proceed with the work at once.

Trusting this will be satisfactory, we remain,

Yours very truly,

C. J. Klesh, Supt. Eastern.

SOLE AGENCY.

EDISON SYSTEM OF INCANDESCENT LIGHTING.

DISTRIBUTION OF POWER BY MEANS OF ELECTRICITY, EMBRACING THE EDISON MULTIPLE ARC SYSTEM, THREE-WIRE SYSTEM AND MUNICIPAL SYSTEM.

EDISON LIGHT

EDISON UNITED MANUFACTURING COMPANY,

OF NEW YORK.

GEO. W. COSTER, GEN'L AGENT.

OWEN FORD, General Manager.

MITCHELL BUILDING, 99 WEST FOURTH STREET.

STATE OF OHIO.

CENTRAL STATIONS, ISOLATED AND STREET LIGHTING PLANTS.

GENERAL CONSTRUCTION WORK, ELECTRICAL CALCULATIONS AND DETERMINATIONS;

ALSO, PLANS AND SPECIFICATIONS FOR ALL KINDS OF ELECTRIC WORK.

CINCINNATI, O. May 28th, 1889. 18

Thomas A. Edison, Esq.,
New York City.

Dear Sir:

I have supplied two of our dynamos to a Mr. Iler, of Omaha, Nebraska, to be used for the purpose of purifying and ageing liquors, etc. Mr. Iler is a wealthy man, and one of the officers of the Whiskey Trust, and he owns the controlling patent for this process. The process from my personal observation has proven very satisfactory. Mr. Iler is no electrician, and he has no electrical knowledge at his command. He has laid the matter before me as it is, and has now placed the whole matter with myself and Mr. Ford for perfecting in detail and getting in shape for the market.

The trouble arises through the magnets not being properly wound to give the best results from our dynamo, nor are they properly built to distribute the magnetism throughout the tank containing the liquor. No calculations have ever been made to ascertain the exact relations between the power of the magnet and the amount of liquor passing through the tank.

The process consists of an inner magnet wound around a shell core, which sets over a solid core cast on the frame, which covers the magnets and makes it water-proof, so that the liquid cannot get to the magnets. On the outside of this inner magnet is another magnet wound around another casting, cast on the outside of the inner magnet, the whole of which is encased in an iron cylinder with water-proof cap, through which the wires are brought to the surface and attached to the wires leading from the machine. The iron which constitutes the cores of these two magnets are brazed onto a brass bottom so as to make it water-proof; The only exposed iron surface of the magnet being the edges of these two cylindrical cores at the bottom, the smaller of which is about two inches in diameter and the larger about 4 1/2 inches in diameter. The entire cylinder is about eight inches in height by six inches in diameter, and the arrangement has heretofore been to place one or more of these cylinders in a tank, through which the liquor is flowing from bottom to top, the magnetism having the effect of precipitating a sediment from the liquor, which gives the liquor all the properties of old age.

Mr. Iler gave us one of these magnets, which we had apart and examined very closely, and he has agreed to send on a complete set of his apparatus, together with all the samples he now has from treating the various kinds of liquors, and also samples to be treated, so that we will have a good starting point at which to begin.

Mr. Iler has a son whom he has thus far trusted with the handling of this matter, and whom he wishes to have go on to your laboratory and remain during the time that the experiments, etc., are being conducted, so that he will be well fitted for visiting the different distilleries and introducing this method when we shall have the apparatus perfected for them.

Mr. Iler stands ready to pay for the experiments of any one that you will put at that work; he also agrees to purchase all of the apparatus, including dynamos and magnets, from the Edison Company, and if you will perfect it for him he will give you any fair interest in the business which you would ask.

I do hope you can do something to help us out in this matter, as if you had seen this process like myself, you could not help but believe in it, and if we once perfect it, the amount of money which it would bring in would be enormous. To show how large a revenue this would produce, Mr. Iler could easily get one cent a bushel for each bushel of grain used in the distillery. An average distillery uses 1000 bushels a day; this would be a revenue of $10 a day from each distillery, and as the apparatus would cost about $300, you can see what an immense revenue there would be from a small outlay.

I can also assure you that this is not the only use to which these magnets can be put, as we know an engineer who has been treating the water which he uses in his boiler with this process. Before using the process the boilers always had a heavy incrustation of hard scale, and since the process has been used no scale at all forms.

Will you please advise me what you will do in this matter. I hope very much that you will take hold of it, as I know it will require very little of your valuable time to have it perfected, and I believe that there is loads of money in it for us all, and no electric sugar case either.

Very respectfully,

Geo. M. Cooley

EDMC

PLANTS SOLD DURING MAY, 1882.

Purchaser	Location	Business	Lamp Capacity.	
Roanoke Elect.Lt.Co.	Roanoke,Va.	Central Station	1000	
American Glucose Co.	Buffalo,N.Y.	Glucose Wks.	1000	
Hackensack El.Lt.& P.Co.	Hackensack,N.J.	Central Station	650	
Union Iron Works	San Francisco,Cal.	Str.SanFrancisco	1200	
Gloucester Ferry Co.	Philadelphia,Pa.	" Sylvan Glen	75	
Estey Organ Co.	Brattleboro,Vt.	Organs	20	
J.A.& G.A.Stevens	Lake Placid,N.Y.	Hotel	225	
Bluffton Land, Ore & Furnace Co.	Bluffton,Ala.	Foundry	115	
U.S. Government	West Point,N.Y.	Military Academy	75	
Capital City Oil Mill	Baton Rouge,La.	Oil Mill	115	
Silver Plate Cutlery Co.	Birmingham,Conn.	Silver Plate Ware	40	
Portland Hotel Co.	Portland,Ore.	Hotel	1250	
Krehl,Hauser & Co.	Girard,Ohio.	Tannery	40	
Jos.Turner & Sons Mfg.Co.	Cleveland,Ohio	Woolen Mill	400	
Sand Hill Hotel Co.	Augusta,Ga.	Hotel	200	Inc
R.R. Woods	McCook,Neb.	Central Station	450	
Phoenix Woolen Mill	Stafford,Conn.	Woolen Mill	75	
E.G. Acheson	Pittsburg,Pa.	Laboratory	10	
Central R.R.N.J.	Jersey City,N.J.	Str."Sandy Hook"	225	
N.Y.C.& H.R.R.R.	New York,N.Y.	Railroad Depot	1400	
Brooklyn Annex Co.	Brooklyn,N.Y.	Str."Butterfield"	75	
John Schuette	Manitowac,Wis.	Central Station	1800	
Menominee El.Lt.Co.	Menominee,Mich.	" "	75	
Gloucester Ferry Co.	Philadelphia,Pa.	Str."Sylvan Dell"	75	
Woburn El.Lt.Co.	Woburn,Mass.	Central Station	300	Inc
Union Depot	Ogden,Utah	R.R. Depot	150	Inc
Elgin Watch Co.	Elgin,Ill.	Watch Factory	5000	
Penn. R.R. Co.	Altoona,Penn.	Shops	225	
Wm. Rockefeller	Tarrytown,N.Y.	Residence	750	
Clifton Mfg.Co.	Clifton,S.C.	Mill	750	
Morgan Iron Works	New York City	O.S.S."Concord"	240	Never reported before
Morgan Iron Works	New York City	U.S.S."Bennington"	240	
			18245	

Form 23. E U M C

The Edison United Manufacturing Company,

65 Fifth Avenue,

In replying please address
"THE EDISON UNITED MFG. CO."

NEW YORK, June 3, 1889.

My Dear Mate,

Somebody ought to drop a note to Mr. Baker of Boston and inform him that the scroll work is simply carbon filament, excepting where the lamps are connected and that these filaments are supposed to be up to a reasonable amount of incandescence so as to show the artistic work of the designer.

We are exceedinly obliged to you and also to Mr. Baker, and we feel quite positive that the armature will not be short-circuited as long as the filaments are of high resistance.

Truly yours,

A. O. Tate, Esq.,
Llewellyn Park,
Orange, N. J.

E U HC
THE GENESEE.
ROGERS & ROY.

BUFFALO, June 13th 1889

My Dear Edison

I send you by to-days mail a map of Buffalo showing the best lighting & also what the other Companies are doing Gas is one dollar & 40 per M & very good gas. I have proposed to these people that we put in $25000 and they put in the same and Capitalize at $50000. I ignore the patent question entirely and tell them if we think we will make dividends on our investment they should be satisfied to do the same. I also tell them that the reason we do not put in the money is that we want legal people interested to get the franchises for us and act as Trust & Directors

in order to localize the investment. Johnson asked about how many lamps this will put in. Day thought could be determined exactly until the Engineering Department make the plans. Said as to our interest to get in as many lamps for the money as it is theirs. I also state the reason that we would not allow them to take more than 50% of the stock is because we want to control the medium of the plant and put it in on a paying basis. This kind of stock takes beautifully and I think we can profit on this plan. We will have trouble in getting franchises so we will antagonize all the Gas and electric light interests. But money and brains will do it.

I had a letter of introduction to

THE GENESEE.
ROGERS & ROY.

BUFFALO, ... 188

Wm. Wilson Brassell a great Cleveland's law partner and a man who stands the highest in the Community for honesty & reliability. I found him very pleasant and is certainly fair & square but unfortunately he is the counsel for the Brush Co, but he is very anxious (after I unfolded my scheme) for me not to do anything until Dan O'Day returns from Europe which will be about July 15th. O'Day is president of the Brush Co. the National Gas Co. one of the Banks and a Director in every enterprise in Buffalo. Brassell says as we will not hurt his interest in the Arc lamps. that he thinks Dolan as satisfied by this time that is no money in the Motor Bonds systems and that he will throw it up and go in

with us. Other lots speak in the same manner of B.D.Day. I told him we could not back for D.Day. Bissell says the Buick Co declared their first dividend on last January & it was 17 p%. At this stockholders meeting he thinks such a favorable showing has been made that people will be very slow to invest & that they would not invest for any other plan than the one I propose

I will remain here until Monday next seeing about the chances for franchises & then return to N.Y. and report to Herrick. I could easily print a similar map to this one & send them to you so that you may think over the situation and devise some cheaper & more expeditious way of

THE GENESEE.
ROGERS & ROY.

BUFFALO, 188

determining the electrical center. The old way does not look to me real in the dealings of the months of the Oct. I believe I can go over it & get a better electrical center than you can in the old way & I think we can operate about 40,000 lamps here

Please think over this matter and make any suggestions that occur to you when I see you. I want you to interest yourself in this because I have great faith in your business judgement and I have always profited by your advice

I have a meeting to night with a lawyer who will tell me what he will charge to get franchise as he says he can does I also must come up to Utica

this afternoon at the private residence of C. J. Hamlin to whom I brought a letter from the Mayor of Attica who is an old friend of mine

Yours truly

J. N. Preston Fox

EUMC

The Edison United Manufacturing Company,

65 Fifth Avenue,

In replying please address "THE EDISON UNITED MFG. CO."

NEW YORK, June 21st 1889

Jno. Burke Esq
34 South William St.
City.

Dear Sir,

Herewith we beg to hand you a statement of a/c showing balance in your favor of $61 53/100. If the amount is correct, will you please mail your check to balance the account, as we are about to close our books.

If there are any differences to be adjusted will you kindly write to us, to enable us to make the adjustment without delay.

Trusting you will give this your prompt attention we are

Yours truly
The Edison United Mfg Co
Collection

Encl

Check Burke June 24

EUMC

THE PLANKINTON.

A. L. CHASE, MANAGER.

Milwaukee June 24 1889

My Dear Edison

I saw an Aldermen to day about franchises and he began to laugh at me He told me that the Edison Co had obtained two franchises from the City and forfeited them both. He left me the City made them give a bond and they got out of paying the bond in some way. He said if you apply for franchises the Council will not grant them unless you show a certified check that your Capital is in one of our banks as they have no faith in the

Edison L. Now this is a
deal of a state of things
When I told some of the
people here that we would
give 20 lamps to the H.P.
they thought it did like
a gas meter. I wish
you would telegraph this
to me as soon as you
get this letter please of this
kind as they will believe
you.

The Westinghouse Co
has a company formed
here of $150,000 capital
and they have good men
in it, their application
for franchises comes up at
the meeting of Council
next monday. I shall try
to kill it, but we have such
a bad name here that I

THE PLANKINTON.

A. L. CHASE, MANAGER.

Milwaukee, _____ 188

am afraid we will not
succeed. This is some
more of Mr McClements
beautiful management
as he & Churchhill worked
at this last.

I am now trying to make
a combination with the
Thompson & Co & see
they have a good plant
and franchises overhead
and underground. They
want a combination to fight
Westinghouse who has
combined with the Western
Electric Co.

Yours

EUMC

Mr. Edison

THE PLANKINTON.

A. L. CHASE, MANAGER.

Milwaukee, June 26 1889

My Dear Edison

The Chicago Edison Co in 1883 obtained a franchise from the City and did not do anything until the E. P. Dawes Co Limited (and Ltd limited) got another and did nothing Then Churchill came here and got some money subscribed and one man died and the Company went up Then Leonard had an option & did nothing for the last six months. Now the Edison Co has a good name here for mind and a bad one for business. I shall be in New York Saturday next and

THE PLANKINTON.

A. L. CHASE, MANAGER.

Milwaukee, _____ 188

of the Company will put up the money in any Bank here as to satisfy these people they have the money to go on with the work. I can place 500 M of the Stock and I can get the franchises. If you want to buy to do any thing here must be satisfy the people that we have the money. The only opposition is the Bad Electric Co using D.C. Hay system. They will sell out or make a combination and if we do not want it do that they are not strong enough to fight us. The Washington have made a combination with the Western Electric Co. The Westinghouse are now back from a Company of $30,000 Capitalization they have put up $30,000 in Cash and the local people have taken $40,000 total $70,000.

I have a promise from the Board of the Gas Co here that they will not fight us because I assist them and offered them 500 of our stock at par. Some of them may come in but they will not oppose us. Now if the Edison Co means business about putting up money and not talk here is the place to do it and I want you to stand by me and help me to get them to do what they certainly should do at once

I will be at the New York Hotel Friday night and I will try to see you Saturday morning, if you were not [illegible] I would come Friday as I want to see you before the Company acts in the matter

Yours Truly

TAE

New York, December 5th, 1889

Mr. Thomas A. Edison,

Dear Sir:-

I inclose you copy of letter addressed to me by Mr. A. Reasoner, Superintendent of the D. L. & W. R. R. Co. which proves most conclusively that I virtually secured the contract for the Edison Electric Light plant in their new depot and sheds at Hoboken, N. J., and yet Frank Chinnock ignoring his pledged word to me "that he would divide his commission with me if the contract was secured", not only absolutely ignores my claim, but refused my request of the small sum of $50., although my commissions would foot up over $250., exclusive of engines and wiring, and calls me a blackmailer in addition. This plant consists of two 45o light machines, one eighty horse power N. Y. Safety Engine with wiring, fixtures etc.

During the period of eight months that I was connect ed with the Edison Co. I secured about eight contracts, none less than $2000 and at regular list prices, and I think I fairly earned my $150 a month and an average of not to exceed Five Dollars a week for expenses, or a grand total of about $1375. paid me inclusive of necessary expenses for the sale of the above, yet I was engaged upon a guaranteed salary of $1800 a year and 15% commissions, and when I refused to resign until my year was up, and by

the advice of Mr. Batchelor sued the company, three of the officials swore I was engaged by the month, and I lost the case. I have made several demands for a statement of my account but could get no satisfaction. I expected that I would have had your support so long as I did my duty, and was successful, but I was cruelly disappointed. Mr. Tait said to me the other night that had you not, as it were, forced me upon Chinnock he would have treated me differently, he simply resented your interference with his perogative, and I suffered accordingly. I have paid over $200 for furniture, supposing I was permanentlyengaged, and as it was purchased on the instalment plan, I was forced to give it up, and lose what I had paid as well as my home.

You are an old telegrapher, so am I. You were once poor, and I am now, and I only ask justice of you, will you give it to me? I shall trouble you no more, however, in this way.

Respectfully,

E. J. Hubbell

No 313 West 23rd St

[ENCLOSURE]

Hoboken Station, Nov. 29, 1889.

Mr. C. J. Hubbell,

Dear Sir:-

At your request , I am perfectly willing ~~xx~~ in order to corroborate your statement made you say to the Edison United Mfg. Co. and their agent for this State, Mr. Frank Chinnock, whom you first introduced to me to say that I endorse your claim that you virtually secured the contract for the Electric Light plant at this Station, that it was primarily upon your representations, and personal efforts and recommendations that the matter was considered and entertained by me. You spent considerable time and had several interviews upon the subject and submitted a proposal before introducing Mr. Chinnock.

Yours truly,

A. Reasoner,

Supt.

1889. Electric Light - Foreign - General (D-89-41)

This folder contains correspondence and other documents relating to the electric light business in various foreign countries. Some of the correspondence concerns competition in Japan between the Allgemeine Electricitats Gesellschaft and Frazar & Co. Other letters pertain to Edison's stock transactions with the Edison Spanish Colonial Light Co., the quality of Siemens cables in Europe, and a royalty dispute between the Canadian Edison Manufacturing Co. and the Edison Electric Light Co.

Approximately 70 percent of the documents have been filmed. The following categories of documents have not been filmed: letters of transmittal and acknowledgement; meeting announcements; other routine business correspondence.

Elec Lt Mexico

WM. T. M. MOTTRAM,
ELECTRICAL ENGINEER.

AGENT AND CONTRACTOR FOR THE INSTALLATION OF CENTRAL STATIONS FOR LIGHT AND POWER, ALSO SMALL PLANTS, SPRAGUE ELECTRIC STREET RAILWAYS AND STATIONARY MOTORS.

OFFICE 731, MAIN STREET.

THE EDISON LIGHT.

Gilsey House, New York, 1/3 1884

~~Dallas, Texas, 1/3 1884~~

Thos. A. Edison, Esq.
Orange, N.J.

Dear Sir — Tell Mottram get the Keller from Vail & Jewel indorsed it

I have come to New York from Texas to meet an English capitalist with a view to forming a company to exploit the Edison system in Mexico. As I am almost a stranger to the gentleman it would be of great value to me to have from you some recognition of the seven years' work I have done in the Edison system, over your own signature. You will probably remember that I have had the good fortune to be a champion of the direct system, having come in contact with the alternating system from the beginning in Europe, and later at New Orleans.

I shall highly appreciate it, if you can give me a personal endorsement as an electrical engineer, as I desire to use the same as a credential, your name being so well known.

My man leaves early Wednesday morning for London.

WM. T. M. MOTTRAM,
ELECTRICAL ENGINEER.

AGENT AND CONTRACTOR FOR THE INSTALLATION OF CENTRAL STATIONS FOR LIGHT AND POWER. ALSO SMALL PLANTS, SPRAGUE ELECTRIC STREET RAILWAYS AND STATIONARY MOTORS.

OFFICE 731, MAIN STREET.

THE EDISON LIGHT.

Dallas, Texas, ... 188...

2.

and I would like, if possible, to have your letter in time to hand to him on Tuesday, the 15th inst.

Yours faithfully,

Wm. T. M. Mottram

Enclosure S & B.

Lowrey, Stone & Auerbach.

Attorneys & Counsellors at Law.

GRISWOLD P. LOWREY.
CHAS. FRANCIS STONE.
JOSEPH S. AUERBACH.
RICHARD M. DYKEMAN.
LEONIDAS BENNER.
FRANCIS P. LOWREY.

No. 15 Broad St. (MILLS BUILDING) New York.

January 15 1889

Report returned 16/1/89.

Dear Mr. Jail:

I enclose you the Annual Report of the Edison Spanish Colonial Light Company. Will you kindly have Mr. Edison sign it as President — and also sign the verification and swear to the same before a Notary. It will be necessary that the authority of the Notary should be certified by your County Clerk. If you will kindly have this done and return the paper to me, with a memorandum of any expenses incurred by you I will remit the amount without delay.

May I urge you to let this have prompt attention — as I presume you know the report must be filed on or before the 20 inst. in order to protect the Trustees.

Yours very respy

R. M. Dykeman Secty

Spanish + Colonial

Lowrey, Stone & Auerbach,
Attorneys & Counsellors at Law,
No. 15 Broad St. (MILLS BUILDING) New York.

GROSVENOR P. LOWREY.
CHAS. FRANCIS STONE.
JOSEPH S. AUERBACH.
RICHARD W. STEVENSON.
LEONIDAS DENNIS.
FRANCIS P. LOWREY.

January 19th, 1889.

A. O. Tate, Esq.,

Orange, N. J.

Dear Sir:-

On consideration I think that the interests of Mr. Edison and the other Stockholders of the Edison Spanish Colonial Co. lies in favor of paying Mr. Navarro for his advances of, say, $40,000. by an issue of that amount of increased Capital Stock, rather than by giving him a portion of the Stock of the Havana Co.

As I understand it, there is a chance of the Havana Co. proceeding to obtain concessions outside of Havana, in which case that Company gives us a corresponding compensation to that now promised when the Havana grant is signed. The value of these expectations it is difficult or impossible now to estimate. But unless that value is at least 1/7 of the present cash value of our Capital, we shall lose by not increasing our Stock. I get at this result in this way: We are entitled to about 1/5 of the Havana Co's. Stock of $1,500,000. The Gas Co., I am told, has offered to consolidate interests and to issue to the Havana Co. a million of Gas Stock now said to be worth 40 to 50% cash. Our interest therein 1/5 of $200,000 Stock worth, say 50% = $100,000, or par of our present Capital of $100,000. If this is correct it will fol-

low:

1. If we add $40,000 to our present Capital each share of the new Stock will be worth $70., plus $\frac{1}{1400}$ of the chances under future contracts.

2. If we pay our indebtedness of $40,000 by transferring an equivalent in Havana Stock, we reduce our holding of that from an assumed present cash value of $100,000 to $60,000. Then each share of our Stock is worth $60., plus $\frac{1}{1000}$ of the value of the chances of an interest in future contracts.

If we take the latter course we give up now 1/7 of the assumed present cash value of each of our Colonial shares and get in return what? Nothing but the difference between $\frac{1}{1000}$ and $\frac{1}{1400}$ of the value of those chances.

Suppose the value of the concessions for the balance of the territory outside of Havana is 1/4 of the value of the Havana concession. In that case, on the above basis the outside concessions are worth $125,000 and the interest therein of the Colonial Co. (1/5) = $25,000. If we increase our Capital Stock each share will then get $\frac{1}{1400}$ of 100,000 = $70

$\frac{1}{1400}$ of $25,000 = 17.50

$87.50

If we don't increase, each share will then get:

$\frac{1}{1000}$ of $80,000 - 80.

$\frac{1}{1000}$ 25,000 - 25.

$85.

I will send Mr. Edison's shares as soon as I get Mr. Lowrey Trustee's signature.

Yours &c.,

W. Barnes Jr.

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ENCLOSURES

Lowrey, Stone & Auerbach,
Attorneys & Counsellors at Law.
No. 45 Broad St. (MILLS BUILDING) New York.

GROSVENOR P. LOWREY.
CHAS. FRANCIS STONE.
JOSEPH S. AUERBACH.
RICHARD M. SICKELSON.
LEONIDAS DENNIS.
FRANCIS P. LOWREY.

January 25th, 1889.

T. A. Edison, Esq.,
Orange, N. J.

Dear Sir:-

I enclose certificates for 250 shares of Edison Spanish Colonial Light Company Stock transferred to you this day by G. P. Lowrey, Trustee, - one for 167 and the other for 83 shares. Please sign the transfer on the back of the certificate for 83 shares made to Porter, Lowrey, Soren & Stone and return it to me, and I will send you that firm's receipt for the same.

Please also sign and return to me receipt for the two certificates, as under, and oblige

Yours &c.,

Lowrey, Stone & Auerbach

[ENCLOSURE]

Copy.

Received, New York, January 25th, 1889, of G. P. Lowrey, Trustee, under agreement made between myself and others and the above named G. P. Lowrey, Trustee, dated May 3d, 1882 relating to the issue and distribution of 500 shares of the Capital Stock of the Edison Spanish Colonial Light Company, certificate No. 1 for 187 shares and certificate No. 2 for 63 shares,-being together the 250 shares of stock required by said agreement to be transferred to me by said Trustee.

(Signed) Thomas A. Edison.

Spanish & Oriental

1 enclosure

Lowrey, Stone & Auerbach.

Attorneys & Counsellors at Law.

GROSVENOR P. LOWREY,
CHAS. FRANCIS STONE,
JOSEPH S. AUERBACH,
RICHARD W. STEVENSON,
LEONIDAS DENNIS,
FRANCIS P. LOWREY.

No. 75 Broad St. (MILLS BUILDING) New York.

Dec 1 1889

(Mississippi Col. Co.)

Dear Sir,

Albertol 2/12/89

I enclose form of call of meeting of the stockholders for the purpose of increasing the capital stock of this Company, so as to pay off its debt, as suggested in your late correspondence. The amount suggested — $1.000 — will cover this, with pay the fees for the tax, & the advertisements & of the notices; & the Company may be then cleared of debt on January 1st but we should commence the publication at once, as the law requires three weeks.

Please therefore return me the enclosed signed by you by Monday if possible.

I received yr. favor enclosing your transfer of the 83 shares to Peter Lowry Jones alone, since acknowledge receipt of same in their name.

Yrs truly

Lowrey Stone & Auerbach

D. A. Epson Esq
Orange N.J.

REPRESENTING: 51, 24 - Avenue
FRAZAR & CO., SHANGHAE,
FRAZAR & CO., YOKOHAMA,
CANADIAN PACIFIC RAILWAY
AND STEAMSHIP LINES
(JAPAN AND CHINA AGENCIES)

EVERETT FRAZAR,
124 WATER ST.,
NEW YORK.

Feb 7 1889

My dear Mr Pate

It is my present intention to go out to Orange tomorrow, by either the 2.30 or 3.10 train, and to call upon Mr Edison about 4 o'clock, specially in regard to some important letters, just recd from Yokohama, in reference to the Borden people. X

If I do not hear from you to the contrary, by telephone, up to say noon, I shall consider that I can find Mr Edison and yourself in the Laboratory, at the above mentioned time

Yours truly

Everett Frazar

X also about the Phonograph & other matters. Quite having seen Mr E for some time now. EF

REPRESENTING:
FRAZAR & CO., SHANGHAE,
FRAZAR & CO., YOKOHAMA,
CANADIAN PACIFIC RAILWAY
AND STEAMSHIP LINES.
(JAPAN AND CHINA AGENCIES)

EVERETT FRAZAR,
124 WATER ST.
NEW YORK

Feb. 19th, 1889.

A. O. Tate Esq.,

O r a n g e.

Dear Sir:

Mr. Frazar being extremely busy today with an inward China and Japan mail, desires me to own receipt of your favor of the 16th inst. and to mention that he regrets not having seen you here today, as stated in same. He would like to meet you at this office sometime Wednesday forenoon, and will be pleased to have you telephone, stating when you will reach here.

Yours very truly,

Wallace Peck

[TRANSLATION FOLLOWS]

K.

ALLGEMEINE ELEKTRICITÄTS-GESELLSCHAFT.

S. No. 11555

Eingezahltes Capital: 12 Millionen Mark.

TELEGRAMM-ADRESSE:
„Elektron."

Reichsbank Giro-Conto.

BERLIN N.,
Schlegel-Strasse 26.

19. Februar 1889

Herrn Th. A. Edison,

Orange N.J.

Ihr geehrtes Schreiben vom 31.p. ist zur Hand und wir haben auch Ihren Brief vom 7. November richtig erhalten. Wir bitten sehr um Entschuldigung, dass wir die Beantwortung des letzteren bisher unterlassen hätten, doch wollten wir über den Inhalt zunächst einige Erkundigungen einziehen, die bei der Entfernung der in Frage kommenden Länder von dem unsrigen lange Zeit in Anspruch nehmen.

Wir können Ihnen nach Durchsicht unserer Bücher und Correspondenzen mittheilen, dass directe Lieferungen von Glühlampen nach Japan und China von uns nicht bewerkstelligt worden sind und bleiben zunächst zweifelhaft, ob es sich bei den Reclamationen Ihrer Agenten auch thatsächlich um unser Fabrikat handelt, welches, wie wir leider wissen, vielfach imitirt wird.-

Dies

[TRANSLATION FOLLOWS]

T.A.E. O.

Dies erledigt jedoch nicht die principielle Seite Ihrer Interpellation. Dieselbe lässt die Thatsache ausser Acht, dass wir im vorigen Jahre alle Verpflichtungen gegen Ihre Rechtsnachfolger in Europa, die Compagnie Continentale Edison in Paris, mit enormen Opfern abgelöst haben und seither nicht mehr in dem von Ihnen bezeichneten Verhältniss einer auf ein bestimmtes Gebiet beschränkten Edison-Company stehen. Wir arbeiten auch durchaus nicht nur unter den mit der hiesigen Firma Siemens & Halske gemeinschaftlich erworbenen Edison-Patenten, sondern besitzen viele andere, speciell auch solche, die bei unserer Fabrikation von Glühlampen Anwendung finden. Der Markt für unsere Fabrikate ist der Weltmarkt, und wir können der Verwendung derselben ebenso wenig Schranken ziehen, wie dies z.B. die Herren Siemens & Halske oder andere Fabrikanten von Glühlampen thun, mit denen wir uns durchaus in gleicher Situation befinden.

Nichtsdestowebiger bedauern wir lebhaft, dass Sie sich durch uns in Ihren Unternehmungen geschädigt geglaubt haben und würden uns sehr freuen, wenn diese Aufschlüsse zur Klarstellung der Sachlage beitragen, denn wir wünschen nichts so

sehr,

[TRANSLATION FOLLOWS]

T.A.E. O.

sehr, als freundliche und angenehme Beziehungen zu dem Manne, dem wir unsere höchste Werthschätzung entgegenbringen.

Hochachtungsvoll
ALLGEMEINE ELEKTRICITÄTS-GESELLSCHAFT

[TRANSLATION]

T r a n s l a t i o n.

Berlin, 19th February, 1889.

Thomas A. Edison,

Orange, N. J.

D e a r S i r :-

Your letter of January 31st is at hand, and we also received yours of 7th of November. We ask your pardon that we omitted to answer the latter before this. We intended to get some information bearing on the contents of the same, which took us a long time, as the distance of the countries in question from our country is very great. We now can, after having examined our books and correspondence, notify you that the direct shipments of incandescent lamps to China and Japan have not been done by us, and we remain at present in doubt if the complaints of your agents really refer to our product, which, as we know to our regret, is frequently imitated.

All of the above does by no means satisfy the question of principle referred to in your letter. You have not taken into consideration the fact that we have during the last year entirely discharged all the duties towards your rightful successors in

[TRANSLATION]

Europe,-viz., the Compagnie Continentale Edison, Paris, France, at an enormous expenditure, and since we have accomplished this we do not stand any longer in the position, as you describe it, of one of the Edison Companies, confined to a certain territory.

We also do not work exclusively under the Edison patents, acquired in common with the firm of Siemens & Halske, but we own many more, especially such ones which find use in our manufacture of incandescent lamps. The market for our product is the entire world, and we cannot restrict ourselves in the sale of the same any more than do Siemens and Halske and the other manufacturers of incandescent lamps, with all of whom we are in the same position. Nevertheless, we regret that you believe yourself to be injured by us in our enterprises, and we would be very glad if the above conclusions will help to clear up the situation, as we desire nothing as much as to have a friendly and agreeable intercourse with a man for whom we feel the highest respect.

(Signed) ALLGEMEINE ELEKTRICITATS-GESELLSCHAFT.

Light - Canada

Montreal, Feb. 19th. 1889.

Feb 21/89

A.O.Tate Esq.

C/o T.A.Edison Esq.

Llewellyn Park

Orange, N.J.

Dear Sir:

Possibly you remember still that about a month ago I was in New York and Orange, not of course simultaneously.

At that time I was informed that all details of the new arrangement of the Edison Electric Light business would be arranged within a month, and I have been daily expecting to hear something definite from Mr. Insull about the Canadian business, but so far in vain.

Can you inform me what is being done, so that I may know what arrangements to make for myself, as I am not over anxious at any time to remain idly awaiting results Micawber fashion, however idleness may be remunerated, but prefer to be doing useful work.

Kindly let me hear from you and oblige,

Yours truly,

A. J. Gardner

Cl. 14 - Correa Jr.

Watson, Thorne, Lucas & Masten,
Barristers, Solicitors &c

OFFICES,
YORK CHAMBERS, 9 TORONTO STREET.

Toronto, Ont. 16 May 1889

Dear Sir,

I hear that since the decision of the Judicial Committee the Electric Light Company is contemplating entering on a somewhat extended litigation against rival companies here. If you have a voice in the matter I would be glad if you could send some of it my way. I am sure that the matter can be much better dealt with in Ontario than in any

Wilson, Thorne, Smoke & Masters,
Barristers, Solicitors &c

OFFICES,
YORK CHAMBERS, 9 TORONTO STREET.

Geo. M. Wilson
Thomas Thorne
C. H. Masters
Jas. E. Smoke
Franklin Smoke.

Toronto, Oct. 188

other Provinces. Our Judges are much alike, our procedure much more expeditious & effectual. I am not accustomed to speak of my own or my firms merits but I think that if you make any enquiries you will find that we do our business in a thorough manner up to the times.

I have been giving special attention to the Canadian Laws of Patents, Trade marks and Copyrights for the past three years, have a work on the Statute de-

Watson, Thorne, Lynch & Masten,
Barristers, Solicitors &c.

OFFICES,
YORK CHAMBERS, 9 TORONTO STREET.

D. W. Watson
Geo. Thorne
A. M. Masten
Jas. E. Lynch
Franklin Lynch

Toronto, Ont. 188

cisions about half written
~~of course~~ if I could do
anything by running down
over a Sunday some time
I'd be glad to go down &
meet any of the Corp.
Solicitors / Com

Kind regards to
Mrs Dale

Yours truly
A. M. Masten

A. O. Dale Esq
East Orange
NJ

S1.24- South American

EDISON ELECTRIC LIGHT CO.

16 & 18 BROAD STREET,

New York, March 21st. 1889.

Assn. 22/3/89

My dear Mr. Tate:-

I enclose herewith a declaration which it is necessary for Mr. Edison to make before a Notary Public in view of the fact that the patents taken out in the Argentine Republic appear in Mr. Edison's name and the local Company just formed in Buenos Ayres requires some legal evidence of Mr. Edison's Assignment to us. May I trouble you to have this executed by Mr. Edison in the presence of a Notary and return to me not later than tomorrow night.

Yours very truly,

Secty & Treas.

To A. O. Tate, Esq. Private Secretary.
Edison's Laboratory,
Orange, N. J.

France

Cie Continentale Edison

SOCIÉTÉ ANONYME AU CAPITAL DE 7.000.000.FRANCS

EXPOSITION INTERNATIONALE D'ELECTRICITÉ
PARIS 1881
GRAND DIPLOME
D'HONNEUR

Marque de Fabrique Déposée
Adresse Télégraphique
EDISON-PARIS

ABONNEMENTS TÉLÉPHONIQUES
ADRESSER LES LETTRES ET LES
DÉCLARATIONS DE TOUTE NATURE
A LA CIE CONTINENTALE EDISON
SANS DÉSIGNATION DE PERSONNE

Administration: 8, Rue Caumartin, à Paris.
Ateliers: à Ivry-sur-Seine

Paris, le 22 Mars 1889

Copy sent to D. of S. 2/4/89.

T. A. Edison Esqre

Orange. N. J.
via Hartford.

Sir,

We are in receipt of your esteemed favor, dated 13th inst & beg to inform you that we have paid according to your request the following annuities on the Belgian patent dat 3, dated 31 December 1879

Belgian patent dat 3

11th annuity — f 110 — official last
12 " — " 120 — "
13 " — " 130 — "
14 " — " 140 — "
15 " — " 150 —
patent agt fees — 50
Total f. 700.—
or $142.— which I shall pay for your account to Mr D. Wallerstein, New York.

Yours very truly

COMPAGNIE CONTINENTALE EDISON
Le Directeur

A. W. DANFORTH,
Chief Engineer
& Supt.

SHANGHAI COTTON CLOTH MILL COMPANY,

Shanghai, April 16th 1889.

Thos A. Edison Esq.
65 Fifth Avenue
New York.
N. Y.
U.S.A.

Dear Sir:

We have just made a contract with your local agents, Messrs Fraser & Co for an Edison Incandescent Electric Light Plant of 450 - 16 cp. lights, and as it is to be initial plant in Shanghai and there are many reasons why it should be a perfect success I take opportunity of calling your attention to the subject with the request that you will give, if possible some personal attention to the preparation of the plant. Pressure of time prevents my entering into details by this mail.

I am
Yours Sincerely
A. W. Danforth

Cable Address "Edison, New York."

From the Laboratory
of
Thomas A. Edison.

Orange, N.J., May 17, 89. 188

Subject.

PERSONAL.

My Dear Insull,-

Here is another letter from Mr. Frazar, in regard to the invasion of China and Japan by the Berlin Edison Co. This matter has been put aside for the last few months, awaiting until affairs had developed to such an extent that you could approach Mr. Villard and obtain his assistance. What Frazar objects to is, the use of Mr. Edison's name in China and Japan by the Berlin Company. He says he is not afraid of their competition if they compete under their own name, but he does object to their advertising themselves as Mr. Edison's agents. — practically that is what it amounts to.

Yours truly,

Private Secretary.

1261
635

Samuel Insull, Esq.,
19 Dey St., New York.

[ENCLOSURE]

EF, LF - China

REPRESENTING:
FRAZAR & CO., SHANGHAE,
FRAZAR & CO., YOKOHAMA,
CANADIAN PACIFIC RAILWAY
AND STEAMSHIP LINES.
(JAPAN AND CHINA AGENCIES)

EVERETT FRAZAR,
124 WATER ST.,
NEW YORK, May 9th, 1889.

Thomas A. Edison Esq.,

The Laboratory, O r a n g e.

Dear Sir:

I have just received from Yokohama another special letter on the subject of the Berlin- Edison Company's supplying Edison dynamos and lamps for Japanese direct from Berlin. One Japanese named Niwa who called upon you some time ago lately told our Edison electrician Mr. Brenner, in Tokio, that they had given their order some time ago for an Edison plant of 1,000 lights as a commencement to the German Edison Co. in Berlin and that the dynamos and lamps would be received from there. My partner adds that it is only through the experience that the Niwas have got through the introduction and use of the valuable Bergmann goods in Tokio that they expect to have same duplicated in that city, and that by going about and copying from central stations now running there these Japanese are enabled to assemble a plant modelled after the Edison system. These latter infringements, in the absence of copyright and patent protection in Japan, you cannot, of course, help; but the more serious one of the direct competition now being put forward by the Berlin Company is one to which I must again call your serious attention. Further than this, my Shanghae partner writes me by last mail that he had good hopes of installing an Edison plant in the new cotton cloth company in Shanghae, but the manager

[ENCLOSURE]

who is a personal friend of Mr. Wetmore's candidly told him that he had serious doubts whether he (Mr. W.) would receive the order, as some Germans had just been offering all sorts of inducements to the directors who are chiefly Chinese to buy their incandescent plant from them; and so you see that both in Japan and China the Germans feel themselves free to introduce your own special inventions.

Will you do me and my partners the personal favor to confer with Messrs. Insull and Villard and see if some immediate steps can be taken to have this matter arranged as suggested by you to me when I was in the Laboratory on Feb. 22 last? As stated to you on my last call, my firm is offering very fair terms to Japanese in contracts for Edison plants; but if we are to come into active competition with the Germans in this same class of goods, we well know what this means, Viz.: that there will be no bottom or basis of prices whereby the Japanese will be willing to go on and increase the use of electric lighting. It is a matter demanding our most serious consideration, and I shall be pleased to hear from you shortly after receipt of this.

Mr. Churchill has now arrived in Japan and we are at once taking steps for the introduction of the Phonograph. I hope to get favorable reports very shortly.

Believe me,

Yours very truly,

P.S. Could you not also have Mr. Dyer or Gerrett Smith or other responsible person call on the Berlin Co and get from them the exact situation?

Siemens

THOMAS A. EDISON, President.
CHAS. BATCHELOR, Vice Pres't.

SAMUEL INSULL, Treas. & Gen'l. Manager.

J. HUTCHINSON, Secretary.
JOHN KRUESI, Asst. Gen'l. Manger.

General Office and Works, SCHENECTADY, N.Y.

The Edison Machine Works.

No. 19 Dey Street,

Cable Address, "EDISON, New York."

Personal New York, N.Y. May 27, 1889.

May 28/89

My Dear Edison:

I enclose you herewith copy of correspondence which I have received from Mr. P.S. Dyer, of Antwerp, with relation to Siemens Cable. From this it would appear that Prof. Forbes' information was entirely erroneous. The person referred to by Mr. Pischon is Rathenau, whom you may remember as being interested in the original development of the Edison business in Germany. I happen to know from other sources that Rathenau's relations with Siemens are somewhat unpleasant. He blackguards their work all the time, but notwithstanding is constantly ordering cable and such other material from them.

Yours truly,

Sam'l Insull

[ENCLOSURE]

Siemens Cable

(COPY.) Berlin, W., 29th April, 1889.

Dear Mr.Dyer:-

I was glad to see from your letter that you are alive and kicking. So am I and getting on famously.

In the matter of Siemens Cables I wish to tell you what I have heard. At the bottom of the whole matter is that bl-ck -- g-d Rat----an, of Schlegel Strasse, who took occasion to tell Professor Forbes of London that Siemens' cables went to the deuce after three years' use. Mr.Forbes read a paper on Continental Elec. Stations in the Institution of Electrical Engineers, London, and mentioned what R. had told him. (he greatly appreciated however all the arrangements, shunts, switchboards, etc. constructed by Mr.Fritsche, whose name however was never mentioned of course.) Afterwards Mr.Siemens read a paper in the Electrotechnische Verein of Berlin, the gist of which you find in the Electrical Review of April the 19th 1889, v. 445. He was down upon Rathernan of course, and for the future will be his sworn enemy even more than he has been hitherto. Perhaps the dispute will be superfluous when the new "Fritsche" cable becomes known.

We are going ahead with our dynamo works. A 250 H.P. engine for testing is being put up. One of the largest Electrical Companies in England have secured the English and American patents after having been over here. We are further building a lamp factory for 1,000 lamps a day, which we hope to start in October next.

Yours faithfully,

Signed,

Hugo Pischon.

[ENCLOSURE]

(EXTRACTS.)

Director F.Uppencorn, one of the best electr. experts in Germany says;-about as follows:-

"If cables are laid so that they are not subject to mechanical defects or chemical action, they keep indeed very well. A fortnight ago I examined 6 Siemens cables lying in Munich, each about 200 meters long. The isolation of each cable amounted to 50 megohms per 1,000 meters. There occurred certainly several defects in Berlin, but all of them may be considered as caused by external damages. In consequence of this experience the Allgemeine Elektric. Gesellschaft in future intend to use bare conductors and lay them in canals on porcl. insulators. There has much been talked in the Berlin "Elektrotechnische Verein" about the lead cables".

Mr. Taussig, Mgr. of the Allgemeine Elektr.Gesellschaft, branch office Munich, says:-

"Concerning Siemens cables, their use for street conductors is not practical, as they are easily affected by acids and ammonia water. Especially in cities like Berlin, where cables are laid only a few centimeters in the ground, they are liable to be attacked by everything that causes chemical action, etc."

[ENCLOSURE]

(Copy.) Milano, May 20th, 1889.

Dear Friend Dyer:-

Your favors of April 30th and May 11th came duly to hand. In regard to the information you ask about the Siemens Cables, I would say that we are doing finely in Milan, and I have unlimited confidence in them for high or low tension currents. Direct or alternate according to which they were constructed for. I consider that Prof.Forbes was misled by information he received from some parties interested in depreciating the Siemens cables. There are probably more of them in use in Italy than elsewhere and under more trying conditions (2,000 volt alternate current) and they give perfect satisfaction everywhere. I consider the Siemens cables the best made and most reliable in the market and we continue to use them on a large scale for our underground work, especially high tension circuits.

Yours &c.

Signed J.W.Lieb.

REPRESENTING:
FRAZAR & CO., SHANGHAE,
FRAZAR & CO., YOKOHAMA,
CANADIAN PACIFIC RAILWAY
AND STEAMSHIP LINES.
(JAPAN AND CHINA AGENCIES)

EVERETT FRAZAR,
124 WATER ST.,
NEW YORK.

June 7th, 1889.

My dear Mr. Tate:

Enclosed I hand you copy of letter received from Shanghae. Will you kindly read and please see same before Mr. Edison? This is the most direct case of interference on the part of Germans, who are offering electric lights made in Germany, of anything we have yet encountered.

We have secured an order for 450 lights for the Shanghae Cotton Mill of which Mr. Danforth, whom Mr. Edison has met, is the chief engineer. Being a friend of our Mr. Wetmore's he has succeeded in securing the order, but upon a basis which will not, as I make it, leave us 5 % commission, out of which we have sundry cable and other expenses. It is very necessary, however, if we are to keep the business or have any hopes of doing anything in it, for the future, that we should not let slip an opportunity to put in an American Edison plant in order to secure further business with the Chinese. We have ordered the dynamo and other fixtures and expect to ship the plant within 10 days.

In case Mr. Edison should be going to Europe during the present summer I shall be glad if he will make a special exertion to see the Berlin people and do his best to stop their interference with our Japan and China agencies. We have taken a great deal of time and trouble and now under a heavy expense in the introduction of the Edison light into these countries, but it looks today as if we were going to meet with competition in the very same class of goods with the very worst competitors in the world - the Germans, who are content to work for nothing if they can simply keep others from getting contracts which they may seek. I have lived in China and Japan for many years and know of what I speak. My letter files are filled with instances of this competition, as we took this business and worked hard and honestly in Mr. Edison's interests, as well as our own, I know that he will fully appreciate our position and will do everything in his power to aid us. Within the past six months we have paid the Edison Machine Works $8,500 for dynamo apparatus alone, besides orders for many thousand of lights from the Edison Lamp Co. and sundry fixtures from Bergmann & Co.

Asking you to place the above information fully before Mr. Edison, believe me,

Yours very truly,

Please acknowledge after seeing Mr. Edison

Everett Frazar

[ENCLOSURE]

Copy of Letter Received New York May 27th, 1889.

Shanghae, April 26th, 1889.

Everett Frazar Esq.,

New York.

Dear Sir:

With reference to the order for electric plant sent you by last mail: Mr. A. W. Danforth, through whom the order was obtained, wishes us to ask you to remind Mr. Edison that he is the same person who called on him two or three years ago about a plant.

Mr. Danforth tells us that the Germans who competed with us offered to supply a plant from the Edison Light Agency in Germany at a price which would not have covered cost to us. Whether they could do this at a profit to themselves or whether they were willing to submit to a loss in this case in order to secure larger game to themselves, the fact still remains that their ability to procure Edison Light from any source interferes materially with us and perhaps may render the agency valueless to us, after all the time, labor and expense incurred by us in trying to get the light introduced in this country.

We remain,

Yours very truly,

(Signed) Frazar & Co.

E.H. Foreign - Canada

Samuel Insull, President.
Francis R. Upton, Vice Pres.t

Henry M. Francis, Treas.r
Thomas Butler, Secretary.

Canadian Edison Manufacturing Co.

Treasurer's Office.
126 Craig Street.
Montreal.

FACTORY AT SHERBROOKE, P.Q.
JOHN LANCTON.
GENERAL MANAGER.

Head Office.
19 Dey Street.
New York City.

Montreal, Canada. June 17th 1889

Sam'l Insull Esq President

19 Dey Street, New York

Dear Sir:

I am in receipt of a letter from Mr McClement, Comptroller of the Edison Electric Light Co requesting that I send him with cheque, a statement of royalty due to his Company on sockets, regulators, ammeters and sales of dynamos, since April 15th.

In a conversation with you I understood you to say that you would take up this matter of royalty and see the Edison Electric Light Co in person, in connection therewith.

Since the 15th April last the manufacture of sockets, regulators and ammeters has been literally nothing, at the factory, and of dynamos, but one has been completed since the advent of our Company — Six are now being completed —

When I closed up Mr McClement's matters as Agent for the creditors I gave to the Edison Electric Light Co a statement, as will be shown by reference to the last statements furnished to Mr McClement, the royalty due on the articles above enumerated that were manufactured at that date and taken up as finished manufactures

articles and which form part of the assets turned over by ~~the~~ J.H. McClement, Agent to the Canadian Edison Manufacturing Co.

The demand for the above articles has been very limited in the past month owing to the fact of few sales having been made by the Edison Company's Agents here, of plants. What regulators and ammeters they required were taken from our stock of finished manufactured articles and credited to that account in my ledger, and until we manufacture sockets, regulators &c there of course could be no royalty due to the home Company.

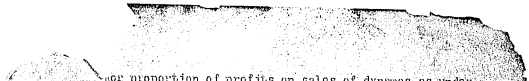
Will you kindly see Mr McClement in person in this connection and should any further explanation be necessary kindly advise me and I will give it prompt attention. In the meantime I have simply acknowledged Mr McClement's letter and stated the fact of my having written you fully, requesting you to call and make a personal explanation.

Yours truly

H.M. Francis

Treasurer

[ENCLOSURE]



...or proportion of profits on sales of dynamos as under

Dynamo #	Shop price	Cost	Sold at	Net profit
82 #2	$300.	$241.46	$330.	$88.54
95 #8	510.	380.09	607.50	227.41
96 #8	510.	378.23	675.	301.77
97 #8	675.	474.63	850.	375.37
98 #8	675.	455.77	850.	394.23
101 #4	420.	287.34	468.	180.66
	$3090.	$2212.52	$3785.50	$1582.98

Realized on sales $3785.50
Shop price 3090.00
Difference to credit of Edison Electric Light Co $ 695.50

For royalty on the following sockets & receptacles

March 8/89	500 1/8 key sockets 15 cts		$75.00
,, 11/89	120 key receptacles	18 ,,	21.60
April 12/89	300 keyless ,,	28 ,,	03.00
,, 1/15/89	1500 1/8 key sockets	15 ,,	225.00
			$390.60

For royalty on following regulators manufactured at Sherbrooke

	Shop price	Selling price
Regulator #4	$16.50	$25.35
,, #6	14.73	22.37
	$31.23	$47.82

Selling price $47.82
Shop price 31.23
$16.57

For royalty on following armatures manufactured at Sherbrooke

	Shop price	Selling price
Armature #5	$7.13	$15.36
,, #6	7.13	15.36
,, #4	7.00	15.45
	$21.26	$47.17

Selling price $47.17
Shop price 31.30
$15.91

For proportion of profit on sundry sales as represented by credit balance of this account, viz: $521.07
Edison Electric Light Company, one half $260.53

(Copy of Royalty Statement Apl. 15/89)

Chas. A. Tate, Esq.

REPRESENTING:
FRAZAR & CO., SHANGHAE,
FRAZAR & CO., YOKOHAMA,
CANADIAN PACIFIC RAILWAY
AND STEAMSHIP LINES,
(JAPAN AND CHINA AGENCIES.)

EVERETT FRAZAR,
124 WATER ST.

NEW YORK, June 26th, 1889.

My dear Mr. Tate:

I am much pleased to learn from your special letter of the 21st Inst. that you are intending to take a trip to Europe, leaving July 2nd, and that you will be glad to take up personally with the Berlin Co. the matter of my firms' agencies for Mr. Edison's incandescent lighting. What we desire and felt confident all along would result, is that we shall maintain the agency of the Edison light in Japan, China and Korea, without interference from the Berlin Co. If, however, you find that it is impossible by legal or other means to stop them from making Edison dynamos, armatures and lamps and sending them to these countries, selling in direct competition with us, some arrangement should be made whereby my firms can have exclusive control of the name Edison, when attached to electric material for Edison incandescent lighting. I ought to communicate with my partners in Japan and China upon this subject before outlining any special arrangement, but of course there is no time to do this previous to your leaving on July 2nd. Can you not favor me with a call within the next few days, letting me know by note or telephone at about what time I may expect you and I will arrange accordingly. Perhaps a mutual personal conference may suggest to us some mode of proceedure satisfactory to all concerned under the circumstances. Please let me know at convenience.

Yours very truly,

Everett Frazar

P.S. Can you not give us the lowest prices for charging us for Bonds to Japan during July Nos.?

EL, H- chmn

(No. 8.)

THE ANGLO-AMERICAN TELEGRAPH COMPANY LIMITED.

No. 574

ATLANTIC CABLE MESSAGE.

Senders of Messages will save considerable time by handing in their Messages direct to the Company's Offices, through which they must pass before they can be sent to their destination.

OFFICE STAMP & DATE.
LONDON
6, THROGMORTON ST.
6 AUG 89

Line No. 16 Place from Edwardsville No. of Words 57

No inquiry respecting this Message can be attended to without the production of this paper.

Sale

TO Metropole Edn

Frazar Complains English Swan Edison Co Competing for work in Japan this is Contrary to English Contract with Edison investigate and report

Insull

A DECHIRER.

Indications de service.

Indications conventionnelles.

Exprès payé.....	XP	Accusé de réception.....	CR
Réponse payée.....	RP	Télégramme recommandé...	TR
Télégramme collationné....	TC	Télégramme à faire suivre...	FS

Dans les dépêches imprimées en caractères romains par l'appareil télégraphique, le premier nombre qui figure après le nom du lieu d'origine est un numéro d'ordre, le second indique le nombre des mots taxés, les autres désignent la date et l'heure du dépôt.

L'État n'est soumis à aucune responsabilité à raison du service de la correspondance privée par la voie télégraphique. (Loi du 29 novembre 1850, art. 6.)

N° _____

Timbre à date.

Pour _____ *de* _____ *N°* _____ *Mots* _____ *Dépôt le* _____ *à* _____ *h.* _____ *m. du* _____

PARIS BERLIN 4 + 412 65 16/8 12-26 S

DEAR SIR IS WE HEAR FROM PAPERS YOU INTEND TO VISIT BERLIN AND SUPPOSE THAT YOU WILL HAVE A LOOK INTO OUR CENTRAL - STATIONS AND WORKSHOPS WE BEG A NOTICE FROM YOU ABOUT THE DATE OF YOUR ARRIVAL IN ORDER THAT OUR DIRECTORS WHO ARE OFTEN OUT OF TOWN MAY BE PRESENT FOR INFORMATIONS + ALLGEMEINE ELECTRICITAETS GESELLSCHAFT +

N° 704 | 1000 | 1911

E1.22 - 9-Mon

ALLGEMEINE ELEKTRICITÄTS-GESELLSCHAFT.

Eingezahltes Kapital: 12 Millionen Mark.

Direction.

26. Schlegelstrasse.

BERLIN, N. den 20th august 1889.

Mr T. A. Edison
Paris

Dear Sir

We were much delighted by your telegramm, in which you state, that we will have the advantage of seeing you between the 10th and 15th of next month here.

We should be happy of course to keep ourselves wholly to your disposition, but we don't know if our what arrangements you have already met, to profit, as much as you can, of the time of your visit.

Hoping that you will favour us with a soon answer, we remain,

Dear Sir,

Yours truly

ALLGEMEINE ELEKTRICITÄTS-GESELLSCHAFT

Mallmann

COMPAGNIE CONTRACTUELLE EDISON

Usine du Palais-Royal

Exploitation des mois de Mai, Juin et Juillet

Dépenses : 34511f 50

Ampères-heures : 1.075.732 a.h.

soit : Prix de revient de l'ampère heure . 0f 03c20082
(non compris les frais d'amortissement.)

Répartition de la dépense de Frs : 34511f 50

Combustible	24.92		
Huile pour cylindre	1.60		
Graissage	1.50	Graissage :	8, 23
Graisse	5.05		
Chiffons	1.36		
Eau de la Ville	1.20		
Lampes (1re Calaisienne)	9.01		
(2e Calaisienne)	2.94	Lampes :	12, 02
Dépenses diverses	2, 24		
Personnel de l'Usine	26.59		
de Direction	4.13	Personnel	36, 24
du Chiffres	5.52		
Entretien des machines	2. 19		
de la canalisation	1.77		
Total :	100, "		

Paris 5 Septembre 1914

Jm Heine

TAE

150 Hp Wheyer & Richmond Engine Trip Expansion
.6 Kilo per Hp indicated — B Press. 140 Lbs
speed 160 — Condensing run 200.

Cost of jet Condenser — for 4 of these
consisting of 2 jet Condensers. Cost 12000 for
without piping —

Total Cost erecting piping 4 Trip Exp.
with jet Condenser allowing to run
$64000 —

Price of Machine $[illegible]000.

Sizes — 150 Hp's 300 Hp —

$\frac{150}{600}$ / 64000 (

El. Lt- South America

Thomas A. Edison

PARIS EXPOSITION

LABORATORY
LLEWELLYN PARK, ORANGE
NEW-JERSEY U.S.A.
CABLE ADDRESS "EDISON NEW-YORK"

BUREAU EDISON
"PALAIS DES MACHINES"
Avenue de La Bourdonnais
CABLE ADDRESS "NEWARK PARIS"

Paris Sept. 13" 1889

Mr. T.A. Edison, Berlin.

Dear Sir: I arrived here this morning after a fast trip per "City of Paris," hoping to find you. Mr. Insull considered it best for me to come over at once & assisted me so to do. A Co. is being formed in London for the West Coast of S.A. & prompt action I can secure it as an Edison Co. I have letters, &c, for London, and important street lighting contracts are open. The N.Y. Directory could not help me because the Co. is incorporated solely for North America, but Mr. Herrick will help me in every way. All I need from you is a letter of introduction to some of your

Thomas A. Edison

PARIS EXPOSITION

LABORATORY
LLEWELLYN PARK, ORANGE
NEW-JERSEY U.S.A.
CABLE ADDRESS "EDISON NEW-YORK"

2

BUREAU EDISON
"PALAIS DES MACHINES"
Avenue de La Bourdonnais
CABLE ADDRESS "NEWARK PARIS"

Paris

London friends & that you become connecting electrician of the Co. I should prefer to see you here if you return, & if not at any other point which you may indicate by telegraph to me here at your office in the Exhibition. Mr. Bylsbee & four more Westinghouse men came over on London business on "City of Paris". I shall need to ask you for $100. or $200 if I have to wait here as I find Paris pretty dear. The capital proposed in England is £250.000 & Mr. Henricle promises me prices low enough to compete with English houses. Waiting your answer, I am

Yours Ever,

W. K. L. Dickson.

Phono - Foreign

(5640) 420 500 (61
41 250 00
10 00

850 (100) 18-19
8 8 8

EDISON LABORATORY.

TELEGRAM.

Nov. 5 1882

From London

To Edison Orange

£1750 per Unit exclusive packing, delivered works Woolwich.

Silvanus

100
1750 00
175,000

$\frac{5280}{2640}$

$\frac{2240}{4480}$

60

@ 22 miles/hr
2 cables = 88 miles × 0.88 = 77.4 knots

5 - £20,000 = 77.4 × 1750 £123000
= $661,000

El. Franc

Law Offices

EATON & LEWIS
S.B.EATON.
EUGENE H. LEWIS

120 Broadway (EQUITABLE BUILDING)

New York Nov. 13, 1889

A.O.Tate, Esq.,
Private Secretary.

Dear Sir:

In compliance with your request, received through Mr. Simpson, I send you enclosed a copy of letter, addressed to Mr. Edison by the Compagnie Continentale Edison re Spanish patent, for your files.

Very truly yours,

S. B. Eaton

[ENCLOSURE]

El.Lt - France

(Copy)

Cie Continentale Edison,

Paris. 28 October 1889.

Th. A. Edison, Esq.,
at Orange near New York. U.S.

Dear Sir: -

Re Spanish Patent Set 9. We beg to hand you enclosed copy we received from Messrs Eaton & Lewis, 120 Broadway, N.Y. General Counsel of the Edison E.L.Coy.

In reply to this letter we beg to say that the Spanish patent Set 9 in question was dropped by this Company by decision of the Board of Directors, which decision was brought to your notice through our registered letter dated 30 September, 1884. On the same date, copy of that letter was forwarded under registered cover to the Edison Electric Light Company of Europe, Limited, to enable our friends to uphold on their account the patent in question should they have considered it advisable.

Will you please eventually communicate with Messrs Eaton & Lewis, bringing these facts to their notice.

Yours very truly

Compagnie Continentale Edison

L'Administrateur Delegue
Louis Rae.

El Lt - France

Ans Jan 9/1890

Cie Continentale Edison

SOCIÉTÉ ANONYME AU CAPITAL DE 10.000.000. FRANCS

EXPOSITION INTERNATIONALE D'ELECTRICITÉ
PARIS 1881
GRAND DIPLOME D'HONNEUR
CONCOURS
MEMBRE DU JURY
Exposition Universelle PARIS 1889

Administration : 8, Rue Caumartin, à Paris.
Ateliers : à Ivry-sur-Seine

Paris, le 28 Novembre 1889

EDISON

Marque de Fabrique déposée

Adresse Télégraphique
EDISON-PARIS

ADRESSER LES LETTRES ET LES COMMUNICATIONS DE TOUTE NATURE A Mr L'ADMINISTRATEUR-DÉLÉGUÉ

Thomas Alva Edison
(Orange) Newyork

Dear Sir,

We hear from the Italian Edison Co that they do not more wish to continue to sustain any longer the 2 following Edison patents:

Italy Set 10 (Ten) Months
Jap Set 11 (eleven) Agreements

of which please take note.

Yours very truly
Le Président du Conseil d'Administration
Ch. Pugo

recommandé
J avis de réception

E.I.H. France

Cie Continentale Edison

SOCIÉTÉ ANONYME AU CAPITAL DE 10.000.000. FRANCS

EXPOSITION INTERNATIONALE D'ELECTRICITÉ
PARIS 1881
GRAND DIPLOME
D'HONNEUR ET CONCOURS

MEMBRE du JURY
Exposition Universelle, PARIS 1889

Marque de Fabrique déposée

Adresse Télégraphique
EDISON-PARIS

ADRESSER LES LETTRES ET LES COMMUNICATIONS DE TOUTE NATURE A Mr L'ADMINISTRATEUR-DÉLÉGUÉ

Administration : 8 Rue Caumartin à Paris.
Ateliers : à Ivry-sur-Seine

Paris, le 26 November 1889 —

Copy sent to Mayor Saton Dec 10/89

Dear Sir,

We beg to acknowledge receipt of your letter of even date 14th inst, enclosing duplicate Patents to the genius to Mr. Saton of Paris — on Fuller patents & have taken due note of its contents —

Yours truly
COMPAGNIE CONTINENTALE EDISON
L'Administrateur Délégué

Thomas Alva Edison Esqre
Orange
N.J. U.S.

El, H - France

Wagner Vestibuled Train
NEW YORK & CHICAGO LIMITED
New York Central
AND
LAKE SHORE ROUTE.

Tuesday 26/10 – 89

My dear Valentin

I inclined leaving for Paris Saturday morning next. I do not expect to be back in New York before Friday morning and having very little time to spend with your people, I am anxious to be able to have all the information prepared regarding all the underground cutting, price

List, and particulars of section L.E. I have had some tubes made before me and expect to have soon the Ivy works pretty busy at them. Your dynamo shop and general engineering is very fine. I was very pleased to see your wire covering department and when you will be able to do some India Rubber covering it will be complete.

I intend staying in New York ~~Saturday~~ Monday, morning will call at Wall Street about 11 & 30 and will go to Orange in the afternoon. I am coming back from Chicago by Pittsburgh.

Hoping to find you all well

Believe me

Yours very truly

Wm Kenny.

EI, Lt- France

Law Offices

EATON & LEWIS
S.D.EATON
EUGENE H.LEWIS

120 Broadway (EQUITABLE BUILDING)

New York Dec. 5th., 1889.

A. O. Tate Esq.,

Orange, New Jersey,

Dear Sir:-

By Major Eaton's direction, I beg leave to acknowledge receipt of your of the 3rd. inst., enclosing a letter from the Compagnie Continentale Edison, addressed to Mr. Edison, stating that the Italian Edison Company does not desire to continue the Edison patents, Set. 10 (meters) and Set. 11 (dynamos).

Very truly yours,

H. W. Simpson

SIEMENS & HALSKE
BERLIN, S.W.
94. Markgrafen-Strasse.

Berlin, Dec 6th 89

Ans. Jan. 6/1890

Thomas A. Edison Esq.
Orange N.J.

Dear Sir:

Referring to your favor to Dr. von Siemens of Nov. 2nd relating to our system of electrical distributions proposed for Frankfort we would like to state, that we were aware of the danger to the lamps by a short-circuit on one of the split circuits. For preventing this danger we have constructed automatic cut-outs which are to be placed into the junction-boxes of the underground cables. A very simple arrangement of this kind is as follows: The five safety-fuses of the five conductors are together imbedded in one body of an insulating, but easily and quickly burning substance. If now two of the conductors are short circuited one or two of said fuses will melt and by so doing will ignite the surrounding substance, by the quick combustion of which an almost simultaneous interruption of all conductors

is established. This arrangement works very well.

As to your proposition of rather using continuous current transformers we must say, that according to our calculations such a system becomes too expensive and therefore would prevent us from competing successfully with other systems.

Yours very truly

W. Stanley Jun.

From

Compagnie Continentale Edison

SOCIÉTÉ ANONYME : CAPITAL 10.000.000 FRANCS

Marque de Fabrique déposée

Adresse Télégraphique
EDISON — PARIS

ADMINISTRATION : 8, Rue Caumartin

Paris le 13th December 1889

c. b.

Thomas alva Edison Esq.
Orange New Jersey

Dear Sir,

Yesterday at the meeting of the Commission, it was decided on my proposal to send you in a short time the plans with the number of lights expected to be connected in our new district, to enable you to address us the complete study of your underground canalisation.

We take the opportunity to thank you for the offer you so prettily made to help us in this matter & the writer wishes personally to send you his best regards and thanks for all the valuable informations you have let him receive from all the Edison workers.

Yours very truly

Ch. Verne.

France

Cie Continentale Edison

SOCIÉTÉ ANONYME AU CAPITAL DE 10.000.000. FRANCS

EXPOSITION INTERNATIONALE D'ELECTRICITÉ
PARIS 1881
GRAND DIPLOME
D'HONNEUR

Administration: 8, Rue Caumartin, à Paris.
Ateliers: à Ivry-sur-Seine

Paris, le 16 Dbre 1889

Cables Jan. 7/90

Th. A. Edison Esqre

Orange
near New York

Dear Sir,

We are in receipt of your wire:

Canadian patents decided favor Edison — Dyer. —

Will you be kind enough to request at once Sully & Dyer & Sky to send us a cable of this very important decision — Thanking you in advance. —

Yours truly
COMPAGNIE CONTINENTALE EDISON
P. Dyer Manager

We congratulate you sincerely to the success. —

Marque de Fabrique déposée

Adresse Télégraphique
EDISON-PARIS

ADRESSER LES LETTRES ET LES COMMUNICATIONS DE TOUTE NATURE A Mr L'ADMINISTRATEUR-DÉLÉGUÉ

El. Lt- Africa

Law Offices

EATON & LEWIS
S.B.EATON
EUGENE H.LEWIS

120 Broadway (EQUITABLE BUILDING)

New York Dec. 26th., 1889

Ack Dec. 28/89

Thomas A. Edison Esq.,
Dear Sir:-

Re Electric Light Patents for Johannesburg and the South African Republic. Replying to Mr. Tate's letter of the 20th. inst., asking whether the above territory belongs to the Australasian Company, we beg to say:

(1) We cannot ascertain for a certainty whether any patents whatever are granted in the South African Republic. Neither Carpmael nor Abbott, in their works, makes mention of this country. The presumption is that there are no patents granted in that country.

(2) In case there are no patents, does the agreement of March 1, 1883, between Mr. Edison, the Marquis of Tweeddale and others, cover good-will? The language of the contract is :"privileges, rights and interests." It is difficult to say just what is covered by these words, but probably they would be held to cover good-will.

(3) Is the South African Republic covered by the said agreement of March 1, 1883? That is to say, does it belong to the Australasian Company? There are two sides to this question. It may be that the said agreement was meant to cover only the English colonies, but this is not clearly expressed. The recitals in the agreement specifically mention the English colonies, but the agreement itself speaks of South Africa without any restriction. Probably all of South Africa, including what is now known as the South African Republic (no matter what it was known as in 1883) is covered by the agreement, and belongs to the Australasian Company.

(4) Assuming that there is no law for patents in the South African Republic, and remembering that the question is in doubt whether, as stated above, the said agreement covers the South African Republic, and remembering also that good-will is possibly also not covered by the said agreement, can you safely sell a plant for Johannesburg? The best answer to be given to this question, with the limited information now before us, is that you must do so at your peril. It is impossible to give a yes or no answer to this question, by means of the papers now before us. If it should turn out that you had no right to make the sale, you would probably have to turn over your profits and nothing more. Whether you care to take that chance, is a practical business

question for you to decide.

We return herewith the copy of the said agreement of March 1,1883,sent us by Mr. Tate.

Hoping the above will be satisfactory,we remain,

Very truly yours,

Eaton Rives

1889. Electric Light - Foreign - United Kingdom (D-89-42)

This folder contains correspondence and other documents pertaining to the organization and management of Edison's British electric lighting companies. Included are letters relating to the Edison & Swan United Electric Light Co., Ltd.; Edison's Indian & Colonial Electric Co.; the Australasian Electric Light, Power & Storage Co.; and the Metropolitan Electric Supply Co., Ltd. Also included is a newspaper clipping regarding Edison's opinion of the electric lighting business in Great Britain. Among the correspondents are Waterhouse, Winterbotham & Harrison, Edison's British patent attorneys; Samuel Flood Page, secretary of the Edison & Swan company; and John B. Verity, a director of the Metropolitan company.

Approximately 60 percent of the documents have been filmed. The following categories of documents have not been filmed: letters of acknowledgement; meeting notices; other routine business correspondence; duplicate copies of selected documents; documents that duplicate information in selected material.

Peter A. Eglard.

(CONFIDENTIAL)

January 3rd. 1889.

T.A.Edison Esq.

Dear Mr. Edison,

I am only 8 days away from you as far as travelling is concerned, but still it is a long way and facts and things get somewhat distorted when they have travelled all the distance from London to you.

I have been known as an Edison man up to now, and therefore, you and others may think it strange that a Company, The Metropolitan Electric Supply, of which I am a Director should give a contract to The Westinghouse Company; therefore I want to take up your valuable time to put myself right with you.

Conditions in London are ~~absolutely~~ very different to what they are in the States. It is absolutely impossible at the present time to run underground cables, although we hope to do so shortly. If we want to do Electric Lighting now, it must be done with aerial wires, these even, being only permitted on suffrance. If we attempted to string heavy cables across the streets such as would be necessary for say, a three wire system, the Local Authorities would at once get an injunction. Therefore if any Electric Lighting from a centre is to be done in London immediately, the high tension system must be employed, and of the Companies working on this plan, our Consulting Electricians held that

that The Westinghouse took the lead.

With regard to yourself you have astaunch adherent in our Chairman Sir John Pender K.C.M.G. who constantly mentions your name, and who also remembers Mr. Johnson very well. Doctor Hopkinson again who is our leading Consulting Electrician, is an advocate of the three wire system.

It would however be absolutely impossible to put down in the present condition of things in England, what is known as an Edison Central Station pure and simple.

When I tell you this I am sure you will believe me, and I assure you I am just the same as when my Uncle and I helped Mr. Johnson to get up the Grand Show at the Crystal Palace 7 years ago. I feel it is necessary for me to write this, as I have not been to the States for a long time now, and people forget one, and fancy and say all manner of things.

In conclusion I hope the time may come when it may be possible to lay down a good Central Station on the lines of your many successful Stations in America: and that we may have the pleasure of seeing you amidst us next year to give us the required impetus.

Believeme, Yours very faithfully,

Wm. S. Voris

Private

TELEPHONE. No 2448. (13)

31, KING STREET, COVENT GARDEN, W.C.
July 5th 89

Dear Mr Edison.

I was indeed glad to hear from your daughter the other day that you were really coming to England after all.

Your presence will be a wonderful help to those who are trying to push forward the electric lighting industry, and will give a great impetus to our Metropolitan Elec: Supply Company.

You will remember when I left America I promised to do my utmost to get one of your three-wire stations laid down by our Company here, and Sir John Pender was very favourable to it. It was therefore a heavy blow to me to hear that Westinghouse has recently purchased from Hopkinson his three-wire patents for this country, as this may prevent our Company having a direct association in this matter with yourself. I look forward, however, to your presence here as a means of clearing the air, and straightening out electric

supply matters generally.

Sir John Pender, Sir James Anderson, and other leading financial men who have been especially connected with Telegraphy will be very anxious to give you a good reception & welcome to the country, and as soon as you arrive in London, I hope to have the pleasure of calling upon you, from them, with reference to it.

I should be very glad if you could find time to let me know the ship you will be going by, and about how long you and your wife will be staying in London, so that I may speak to Pender about it.

Hoping you will have a pleasant voyage across & trusting that Mrs Edison is quite well.

I am, Yours very sincerely

Wm. H. Preece

P.S. I don't think Col. Bourbaki is looked upon very favourably by many in England just now and I am afraid you may hear some rather hard things said about him.

Sl. L1- England

TELEPHONE
No 2440.

12th July 1889

31, KING STREET,
COVENT GARDEN, W.C.

Dear Mr Edison,

Since last writing to you I find to my great regret that I am off again to America on the 3rd of August, arriving there on the 11th and this I will not have the satisfaction of shaking your hand in Europe. I am going to Duluth and Manitoba on important business and I can only hope, selfishly, that something may delay your departure for a few days from America so that I may see you before you leave.

Trusting you are quite well,

Believe me,

Yours very sincerely

Wm. N. Ellis

Edison

Insull

any prospect for us here
in B shares

THE EDISON & SWAN UNITED ELECTRIC LIGHT COMPANY, LIMITED

~~Did we get ad B.~~ E.

DIRECTORS.

JAMES STAATS FORBES, Esquire, Chairman.
FREDERICK RICHARDS LEYLAND, Esquire, Deputy Chairman.
THE VISCOUNT ANSON,
SHELFORD BIDWELL, Esquire, F.R.S.
ERNEST VILLIERS, Esquire.

SIXTH ANNUAL REPORT.

---

1. The Directors herewith present their Report, and the Accounts for the year ending 30th June, 1889.

2. The sale of lamps and fittings has progressed in a satisfactory manner during the year, and has resulted in a credit balance of £47,729 5s. 9d.; to this must be added the sum of £25,123 9s. 7d., the balance of account for the year ending 30th June, 1888, making a total of £72,852 15s. 4d., out of which the Directors have appropriated the sum of £28,815 14s. 2d. to meet losses realised on finally disposing of sundry installations taken over at the date of the amalgamation, and have, under Clause 89 of the Articles of Association, created a reserve of £4,595 10s. 10d., and they recommend the appropriation for

dividend, in accordance with clause 87 of the Articles of Association, of 7 per cent. upon the amount paid up on the A Shares, in respect of the year ending 30th June, 1889, and of 3 per cent. further on account of the arrears of preferential dividend on the A Shares, in respect of the year ending 30th June, 1884.

3. The Supply Companies are establishing Central Stations in London and the Provinces, which must lead to a considerable extension of the business of the Company.

4. The appeal of the Company from the decision of Mr. Justice Kay was heard before Lords Justices Cotton, Lindley, and Bowen, who reversed Mr. Justice Kay's judgment, and decided that Mr. Edison's Patent, 10th November, 1879, was valid.

5. The Brush Company gave notice of their intention of appealing to the House of Lords, but a settlement has been arrived at by which the case will not be carried to the House of Lords. The Brush Company give up manufacturing incandescent lamps, and they pay the taxed costs of the action.

6. Viscount Anson, and Mr. Ernest Villiers retire from the Board and offer themselves for re-election as Directors.

7. Messrs. Welton, Jones & Co. (late Messrs. Quilter, Welton & Co.), the Auditors, also retire, and offer themselves for re-election.

By Order,

S. FLOOD PAGE,

Secretary & Manager.

100, Victoria Street, London, S.W.
12th July, 1889.

The Edison and Swan United Electric Light Company, Limited.

Dr. BALANCE SHEET, 30th June, 1889. *Cr.*

	£ s. d.	£ s. d.
To Share Capital:—		
5,000 A Shares of £5 each, fully paid, allotted to the Edison Electric Light Company, Limited ...	25,000 0 0	
12,139 A Shares of £5 each, fully paid, allotted to the Swan United Electric Light Company, Limited, making up to 5 per cent. for Dividend on the amount credited as paid up, and afterwards equally, per Share, with A Shares partly paid	60,695 0 0	
89,261 A Shares, £5 each, £3 paid ...	267,783 0 0	
23,561 B Shares, £5 each, fully paid	117,820 0 0	
	471,298 0 0	
The B Shares are entitled to one-fourth of the Profits, after a cumulative Preferential Dividend of 7 per cent. per annum has been paid on the A Shares. (The Preferential cumulative Dividend of 7 per cent. amounts to £127,274 3s. 10d.)		
,, Sundry Credit Balances	4,711 0 8	
,, Profit and Loss as per Appropriation Account	44,037 1 2	
	£520,046 1 10	

	£ s. d.	£ s. d.
By Cost of Patents, Goodwill, Preliminary Outlay, Less on Working, &c., as per last Balance Sheet	374,991 3 5	
Further Expenditure thereon	13,999 5 6	
	388,990 8 11	
Less Amount realized by sale of Plant, &c. and estimated to be further received ...	12,560 5 6	
	376,430 3 5	
Deduct B Shares in the Manchester Edison Swan Co., Limited, now entered separately	12,000 0 0	
	364,430 3 5	
Further deduct losses on realisation of sundry installations taken over at the date of amalgamation and heretofore reckoned amongst Capital Outlays...	28,815 14 2	
	335,614 9 3	
,, Amount of B Shares of this Company, issued as per contra ...	117,820 0 0	
		353,434 9 3
,, Manchester Edison Swan Co., Limited, £100,000 B Shares at Nominal Cost		12,000 0 0
,, Investments		57,500 0 0
,, Freehold Property		37,991 4 7
,, Plant and Stock		40,402 18 7
,, Office Furniture		387 7 11
,, Debtors		29,221 15 6
,, Cash at Bankers and in hand ...		29,206 8 0
		£520,046 1 10

Dr. PROFIT AND LOSS ACCOUNT for the Year ended 30th June, 1889. *Cr.*

	£ s. d.	£ s. d.
To Stock on hand, 1st July, 1888 ...		19,500 9 7
,, Wages, Purchases, Cost of Installations, &c.		62,529 17 9
,, Salaries, Directors' Fees, Rent, Office Expenses, Insurance, and General Charges		8,662 17 11
,, Salary payable to Mr. J. W. Swan	875 5 9	
Less Proportion borne by the Swan United Electric Light Co., Ld...	349 6 4	
		526 19 5
,, Depreciation on Plant, &c.		1,334 7 5
,, Reserve for Manchester Edison Swan Co.		300 0 0
,, Income Tax		257 15 6
,, Balance		47,529 5 9
		£140,888 13 4

	£ s. d.	£ s. d.
By Sale of Lamps, Fittings, &c., and Charges for Work done		111,715 1 5
,, Interest, &c.		1,947 13 9
,, Messrs. Davidson and others		2,140 0 0
,, Stock on June 30th, 1889		25,085 18 2
		£140,888 13 4

STATEMENT SHOWING THE PROPOSED APPROPRIATION OF PROFITS.

	£ s. d.	£ s. d.
To Amount transferred to Capital Account to meet losses on realisation of Sundry Installations taken over at the date of amalgamation, and heretofore reckoned amongst Capital Outlays ...		28,815 14 2
,, Dividend for the year ending 30th June, 1889, at 7 per cent., per annum	24,748 9 2	
,, Payment on account of cumulative Preferential Dividend on the A Shares, at the rate of 3 per cent.	10,604 6 10	
,, Directors' Remuneration in accordance with the 82nd Clause of the Articles of Association ...	4,693 14 4	
,, Reserve created in accordance with the provisions of the 89th Clause of the Articles of Association ...	4,635 10 10	
	44,037 1 2	
	£72,852 15 4	

	£ s. d.	£ s. d.
By Balance from last Account to 30th June, 1888 ...		25,123 9 7
,, Balance of Profit for current year to 30th June, 1889		47,729 5 9
		£72,852 15 4

We have examined the foregoing accounts and find them to be in due accordance with the Books and Vouchers of the Company.

London 12th, July, 1889.

WELTON, JONES & Co.,
Auditors.

Edison

Form No. 3.

CABLE MESSAGE.

THE WESTERN UNION TELEGRAPH COMPANY.

All CABLE MESSAGES received for transmission must be written on the Message Blanks provided by this Company for that purpose, under and subject to the conditions printed thereon, and on the back hereof, which conditions have been agreed to by the sender of the following message.

THOS. T. ECKERT, General Manager. NORVIN GREEN, President.

NUMBER	SENT BY	RECD BY	No. OF WORDS	FROM
46	Int	Bn	38	London

Received at ORANGE, N. J. 2.55 Aug 31 1888

To Thos Alva Edison Orange NJ

Tuy directors anxious know when you arrive europe and hope you will be able to meet them and accept their hospitality while on this visit adaptee Niagara Flood Page care Edison London

[FROM JOHN B. VERITY?]

Electron Dr. Eng Card

INDICATIONS DE SERVICE: Dienstaanwijzingen:

D. Télégramme urgent. — *Dringend telegram.*
R. P. Réponse payée. — *Antwoord betaald.*
C. R. Accusé de réception. — *Kennisgeving van ontvang.*
X. P. Exprès payé. — *Bode betaald.*

ADMINISTRATION DES TELEGRAPHES.

BUREAU D'ARRIVÉE:

BRUXELLES 1 OCT 1900 BRUXELLES NORD

TÉLÉGRAMME.

BRUESSEL LONDON 650 35 20/9 6 22 SR le à N°

RETURNET YESTERDAY FROM AMERICA SAW PHILADELPHIA STATION URGENT YOU SHOULD COME SEE PENDER HOPE TO GET YOU CENTRAL STATION ORDER COST VERITY REPLY ELECTROLER LONDON +?

3 M 50 PFG VOM EMPF EINZUZIEHEN

Reçu à: Ontvangen te:
le Télégraphiste.

Attention! Ne pas commettre à aucune responsabilité à raison du service de la correspondance télégraphique. — Loi du 29 Mars 1851, Art. 61. Défendu de faire usage de la correspondance télégraphique à d'autres fins que celles prévues par la loi. — Wet van 29 Maart 1851, Art. 61.

E.L.A.t - England

WATERHOUSE, WINTERBOTHAM & HARRISON,
Solicitors,
1. NEW COURT,
CAREY STREET,
LINCOLN'S INN, W.C.
TELEGRAPH "CURRENCY LONDON"
TELEPHONE No 2550.

26th Sept: 1889.

Dear Sirs

Your Indian Colonial
Electric Light Patents.

We enclose a copy of a letter which we addressed to you yesterday, sending it under cover to Sir John Pender at Foots Cray, & this morning in pursuance of that letter hoping to find you at Sir John's town house our Mr Harrison attended at Arlington Street & learnt that you had left London for Paris this morning.

We therefore beg to enclose the Deed of Assignment of Patents referred to in our letter of yesterday for execution by you in the presence of one Witness who if possible should have a London address.

All costs of this Assignment have to be borne by the Australasian Co. If however you require a licence to use the Patents for locomotion such licence must be at your cost. We have therefore only provided in the Deed that the licence shall be granted if & when you require it.

We are sorry that we

missed you whilst you were in this country as we should have preferred to explain the matter to you personally. You may take it however that the Deed of Assignment has been most carefully perused by us on your behalf & that it goes no further than the terms of the Agreement of March 1883 between yourself and Edison's Indian & Colonial Electric Co'y as modified by the Agreement between that Company and the Australasian Electric Light Power & Storage Co'y of May 1886.

We enclose an envelope for return of the Deed.

We should be glad to avoid troubling you on business while you are in Paris but the extreme urgency of the matter must be our excuse.

We are, dear Sir,

Yours very faithfully,

Walker Smith Hastwell & Morrison

Thomas Alva Edison Esq
Hotel Durand
Place Vendome
Paris

[ENCLOSURE]

Copy

1 New Court
Lincoln's Inn
25th Sept: 1889.

Dear Sir

Your Indian & Colonial Electric Light Patents.

We take the opportunity of your presence in this country to address you on this subject.

You will remember that the consideration to be paid to you by Edison's Indian & Colonial Electric Co for the Colonial Patents was the sum of £25,000 cash 5,000 A shares & 10,000 B shares. This sum of cash was paid to you on the exchange of the Agreement for Sale & the A shares were shortly after allotted to you. By a Special Resolution in 1884 the 10,000 B shares were reduced to 5,000 but for us we are aware these shares were never allotted to you. Under the Agreement they were not to be issued & allotted until the assignment of the Patents by you to the Company which has not been completed. We are now informed that by Agreement dated the 20th of May 1886 the interest of the Edison Indian & Colonial Electric Co in the Patents was made over to the Australasian Electric Light Power & Storage Co you being a party to the Agreement thy this Agreement as we are informed you waived your right to receive the 5,000 B shares above referred to & released the Edison Colonial Co & the Directors from any claim in respect thereof.

Of the above facts you were probably informed through Mr Batman of Messrs J. A.

[ENCLOSURE]

Morgan Hoo: in whose name the A shares were registered jointly with yourself Messrs. Falkner & Lowry. We are now asked by the Australasian Coy to obtain your execution to the Deed of Assignment of the Colonial Patents to that Company & the Draft of such a Deed has been sent to us for perusal on your behalf & we expect to receive the engrossment for execution by you tomorrow morning.

If the representations made to us are correct you are now bound to execute the Deed of Assignment reserving only to yourself the use of the Patents for purposes of locomotion on railways, tramways or on common roads & you have no claim to the above mentioned B shares. We have approved the Draft on your behalf on this basis & have inserted in it a covenant by the Australasian Coy at any time on demand to grant to you the exclusive licences above mentioned.

We write this in order that you may recall the facts before you receive the Deed of Assignment for execution which we hope to send to you tomorrow morning. This it is desired if possible you should execute before you leave this country as time is of importance to the Company.

May we ask you to be kind enough to let us have a line if possible by return of post to say where it would be convenient for you to execute the Deed in question & whether you would wish to see any member of our Firm before executing it.

We are, dear Sirs,

Yours very faithfully,

(Signed) Waterhouse, Hackbotham Harrison

Thomas Alva Edison Esq
c/o Sir John Pender
Forde Lowry & Co

(2)

Edison

Ans. Oct 21/89

100, Victoria Street,
London. S.W.

7th October 1889.

Dear Mr Edison

I hope that you received my telegram at Havre, I sent it from Cologne. I was very sorry that I was not in England during your flying visit: but I hope that you will not put off your visit, next year, so late in the season. If you come

to London in June for will find everything, & everybody, in full swing.

I hope that you had a good passage & that Mrs Edison & you have reached your home safe & well.

The enclosed strange letter was placed by me this morning believing it was for me, a letter for the Company. May the Russian "element" do for good.

With kind regards to Mrs Edison I am

Yours very truly

S. Flood Page.

C.I.L. Cyl'nd

PHILIP S. DYER

EUROPEAN AGENT

AMERICAN

EDISON FACTORIES

Adresse Télégraphique :
DYER (Anvers).

EDISON LAMP COMPANY
EAST NEWARK, N. J.
Capital $ 250,000.

Edison Lamps, 1/2, 1/2, 1, 2, 3, 4, 5, 6, 8, 10, 13, 16, 20, 24, 32, 50, 100, 150 Candle Power
Voltmeters, Portable Voltmeters
Pressure Indicators
Small Battery Edison Lamps, Surgical and Dental Lamps.

THE EDISON MACHINE WORKS
Capital $ 750,000

Electric Light and Telegraph Dynamos, Electric Motors,
Shafting Pulleys etc.
Edison's Underground Cable for Electric Lighting, Telegraph and Telephone,
Edison's Devices for Underground Distribution,
Fusible Metal Strips marked to Ampere Capacity.

BERGMANN AND COMPANY,
Capital $ 750,000

Electrical Instruments
Edison Phonographs,
American Switches, Cut Outs, Sockets,
Glass Fusible Safety Plugs,
Edison's Meters
All Devices for Theatre regulation.

STANDARD THERMOMETER C°
Capital $ 75,000

Metallic Thermometers.

THE TELEMETER COMPANY
OF NEW-YORK
Capital $ 500,000

Electric
Recording Steam Gauges,
Recording Water & Tide Gauge,
Recording Gasometer Gauge,
Elevator Indicator wind Gauge,
Recording Thermometers,
Recording Barometer,
Time System.

Rue Osy, 43°

ANTWERP, Oct 18th 1889

Ans Oct 31/89.

Thomas A. Edison Esq.

Orange N. J.

Dear Sir, 4, Dyer

There are many good Engineers in London putting in Artesian Wells, and all seem to be working Satisfactorily, I did not make any examination as I could not get the map showing the district which you would probably work. Have asked three of the best of these Engineers for full data to send you, I will go to London next week, and look thoroughly into the matter and at same time attend the Board meeting of Sir John Pender's Companys. All Smoker Consumers at present known

have been more or less failures, have been told this by several Engineers who have tried some of the apparatus, and also by Mr. H. Price, who has been interested in this subject for some time past. He told me that just now there is a new invention arrived from Australia, which is now on trial on a steamboat on the river working in fine shape, and has been taken up by a large Engineering firm who will give it a trial at once, and work it for England. Mr Price will get me full particulars soon, says it is cheap, can be attached to any Boiler for about $100, and saves 20% of the fuel. "Kirtley" have promised me a Map of the Keighley district, and I will go all over it and send you particulars of the "Artesian Wells" now in use there.

Yours Truly
Philip A. Dyer Agent

WATERHOUSE, WINTERBOTHAM & HARRISON,
Solicitors.

TELEGRAPH, "CURRENCY LONDON"

TELEPHONE No 2550.

1, NEW COURT,

CAREY STREET,

LINCOLN'S INN, W.C.

21st Octr. 1889.

Dear Sir,

Your Indian & Colonial
Electric Light Patents.

We wrote you on the 25th of September with regard to the assignment by you of the patents to the Australasian Electric Light Power & Storage Company which that company is most anxious to receive without delay. We wrote you again on the morning of the 26th of September and finding that you had left

England we addressed another letter on the same day to the Hotel Durand, Paris, where we hoped it would have reached you. Having no reply, we cabled you on the 7th of October to ask what had become of the deed of Assignment we had forwarded. We send you copies of the letters we addressed to you. We today again cabled you as on the other side at the request of the purchasing Company & we will kindly ask you if you have not already done so to return us the deed if it has been received by you. If not, to let us know that you have not received it, when another engrossment shall be sent to you at once.

We are sorry to be so importunate but the matter is of the utmost urgency for the Company.

We are dear Sir
Yours very faithfully,

Warburton Wimbush & Morris.

9.7.1.

T. A. Edison Esq.
Menlo Park
New Jersey
U.S.A.

Copy Cablegram.

Edison
New York

Assignments Indian & Colonial
Patents sent you September 15
Paris mailed. Has it reached
you Cable Watthouse.

E.I. 44 Ceylon 6

WATERHOUSE, WINTERBOTHAM & HARRISON,
Solicitors.
TELEGRAPH "CURRENCY LONDON"
TELEPHONE No 2550.

1. NEW COURT,
CAREY STREET,
LINCOLN'S INN, W.C.

11th Nov. 1889.

Dear Sir,

Your Indian & Colonial Electric Light Patents.

We are very much obliged to you for your letter of the 1st instant, received this morning, returning the Assignment of Patents to the Australasian Electric Light, Power & Storage Co Ltd, duly executed by you.

Thanking you for your very prompt and courteous attention to the matter,

We are, dear Sir,

Yours very faithfully.

Waterhouse Winterbotham Harrison.

T. A. Edison Esq.
Menlo Park
New Jersey
U.S.A.

£1.21- England

HAROLD P. BROWN,
ELECTRICAL ENGINEER,
46 & 47 WALL STREET,
NEW YORK.
CONTRACTOR FOR ARC AND INCANDESCENT ELECTRIC LIGHTS AND STEAM POWER.
DESIGNER OF APPARATUS FOR SPECIAL PURPOSES.
EXPERT IN PATENT AND CIVIL CASES.

Dec. 30, 1889

Ans
v 6 Jan 3/90

My Dear Mr. Edison,

I inclose a clipping from the London, (England) St. James Gazette of Dec. 21, which evidently shows Sir John Pender has been misquoting a certain Mr. Edison of the U.S. of America. Any reply which you care to make I can have cabled to the London News.

Sincerely Yours,
Harold P. Brown.

Please return clipping.

[ENCLOSURE]

THE ELECTRIC LIGHT IN THE METROPOLIS.

MR. EDISON'S OPINION.

Sir John Pender presided yesterday at the second ordinary general meeting of the Metropolitan Electric Supply Company, Limited, which was held at Winchester House, Old Broad-street, and in moving the adoption of the report, said they looked upon the period of last year as one wherein the foundations of success had been effectually laid. The areas of the company embraced most of the theatres, restaurants, and shops in the neighbourhood of Holborn, Oxford-street, and the Strand, Chancery-lane and Lincoln's Inn and other residential places, which gave them ample scope for work. Hotel Victoria, and the Gaiety and Drury Lane Theatres. They were able to put in more than double the present number of installations, and new contracts for lights, and it was estimated that these would produce a revenue of about £20,000 a year. When two other stations were completed they would supply 80,000 lights with a gross revenue of £60,000. When Mr. Edison was in England in the autumn, he (the chairman) took him over the works, and Mr. Edison said, "You are on the right way. You are applying the science in a thoroughly practical way. You are doing that which cannot fail to be a success. There is no city so well suited for electric lighting as London. You have a large area and a large population, and about the worst weather you can possibly have—(laughter)—so that electric lighting becomes a practical necessity." That day he (the chairman) had received a telegram from Mr. Edison stating that there were sixty companies of a similar character in America paying from 6 per cent. to 20 per cent. He had also received a telegram from Berlin showing that the companies in that city were now paying 9 per cent., while a large increase was expected when they got into full working order. Sir Robert Fowler, M.P., seconded the motion, which, after a brief conversation was unanimously adopted.

Directors.

SIR JOHN PENDER, K.C.M.G., Chairman of the Eastern and Eastern Extension Telegraph Companies, *Chairman.*

SIR GEORGE ELLIOT, Bart., M.P., Director of the Telegraph Construction and Maintenance Company Limited.

SIR ROBERT N. FOWLER, Bart., M.P., Alderman (Messrs. Dimsdale, Fowler, Barnard & Co.)

ADMIRAL SIR GEORGE H. RICHARDS, K.C.B., F.R.S., Managing Director of the Telegraph Construction and Maintenance Company Limited.

SIR JAMES ANDERSON, Managing Director of the Eastern and the Eastern and South African Telegraph Companies, &c.

J. SPENCER BALFOUR, Esq., Deputy-Chairman of the Debenture Corporation Limited.

J. E. H. GORDON, Esq., Electrical Engineer.

J. C. PARKINSON, Esq., Managing Director of the Alexandra (Newport and South Wales) Docks and Railway Company.

J. DENISON PENDER, Esq., Director of the Eastern Extension Telegraph Company Limited.

JOHN B. VERITY, Esq. (Messrs. B. Verity & Sons, Electrical Engineers).

HENRY WEAVER, Esq., Managing Director of the Anglo-American Telegraph Company Limited.

H. GRANVILLE WRIGHT, Esq., Director of the Hotel Victoria Limited.

Consulting Engineers.

Sir WILLIAM THOMSON, D.C.L., LL.D., F.R.S.
Professor GEORGE FORBES, F.R.S.E.
Dr. JOHN HOPKINSON, M.A., F.R.S.

1889. Electric Light - United Edison Manufacturing Company (D-89-43)

This folder contains correspondence and other documents relating to the business of the United Edison Manufacturing Co. This company was organized in 1889 as a successor to the Edison United Manufacturing Co. Much of the correspondence is by Jacob H. Herrick, president, and J. C. Henderson, chief engineer of construction, and deals with comparative costs of wiring systems for central stations, canvassing of potential districts, and franchise negotiations for installing electric light distribution systems.

Approximately 60 percent of the documents have been filmed. The following categories of documents have not been filmed: letters of transmittal and acknowledgement; other routine business correspondence.

VEHC

United Edison Manufacturing Company,

65 Fifth Avenue,

In replying please address
"United Edison Mfg. Co."

New York, July 17th, 1889.

Mr. A. O. Tate

Dear Sir:—

Under the recent consolidation of the various Edison Electric Companies, the United Edison Manufacturing Company, at 65 Fifth Avenue, becomes the successor of The Edison United Manufacturing Company, and will liquidate their business.

To faciliate this liquidation hereafter please draw all checks to the order of the United Edison Manufacturing Company, addressed as above; also address all communications to them.

Truly yours,

United Edison Manufacturing Co.

J. H. HERRICK,

President.

Approved,

The Edison United Manufacturing Co.

Thomas A. Edison, President.

[FROM ARNOLD MARCUS]

UEHC

UNITED EDISON MANUFACTURING COMPANY.

Mills Building,

N e w Y o r k, September 5, 1889.

Thomas A. Edison, Esq.,

Orange, N.J.

Dear Sir:

I beg to inform you that, at a meeting of the Executive Committee of the Board of Trustees of this Company held on the 29th ult., you were appointed a member of the Technical Committee.

I am, dear Sir,

Yours very truly,

Secretary.

JEHC

ADDRESS IN REPLY,
"UNITED EDISON MFG. CO."

UNITED EDISON MANUFACTURING COMPANY,

DEPARTMENT OF
CENTRAL STATIONS,
(IN TOWNS UP TO 25,000 POPULATION.)
AND
ISOLATED PLANTS.

65 FIFTH AVENUE,

NEW YORK, October 25, 1889.

Thos. A. Edison, Esq.,
Llewellyn Park, Orange, N.J.

Dear Sir:--

Have been figuring over the question of comparative cost of the two, three, four, five six and seven wire systems and beg to forward you here ith tabulated statement of the co nd usi ons to which I have come.

I think the table will be self-explanatory. I have assumed all neutral wires of the same size as the outside wires.

If my figures are correct the additional complication of the five-wire system does not seem to be justified by the saving. If we could use 155 Volt lamps on the three-wire system, it would be as cheap as 100 Volt lamps on the five wire system, and we could operate at any loss desired, without difficulty as to regulation.

If the results do not seem sufficiently clear, or appear to be incorrect, should be pleased to have you criticise them,

Truly yours,

Edward Johnson

Gen'l Manager.

[ENCLOSURE]

UEMC

		2-Wire,	3-Wire,	4-Wire,	5-Wire,	6-Wire,	7-Wire
Comparative cost same % loss, same distance and same voltage lamps,	100.	37.5, 32.5	22.2, 17.8	15.6 11.9	12. 8.8	9.72 6.94	
Saving over previous column,	-----	62.5% 67.5	40.8% 45.4	29% 33.1	23% 26	19% 21	
Saving over 3-Wire,	----	~~37.5~~	40.8% 45	58% 63.4	68%	71 %	
Saving over 2-Wire,	----	62.5 % 67.5	77.8% 82.2	84.4% 88.1	88.% 91.2	90.3% 93.1	
Comparative distance for same cost, same % of loss and same voltage lamps,	1	1.63 1.76	2.12 2.37	2.53 2.90	2.9	3.2	
Comparative area for same cost, same % of loss and same voltage lamps,	1	2.66 3.08	4.5 5.62	6.4 8.4	8.33	10.28	
Comparative % of loss for same cost, same distance and same voltage lamps,	33%	15.7%	10. %	7.2 %	5.66%	4.6%	
Voltage of lamps on 3-Wire system to make same cost at same distance and loss as lamps under the various heads,	56.8 61.3 volts	100. volts	134.7 129.9 volts	165 155. volts	176.8 volts	196.4 volts	

A. Ward Leonard Oct 27/87

The pencil figures are the amendments introduced by taking into account the fact that Leslie have only 33⅓ of their customers in their districts and that 60% of their customers in a system is generally operating fed into the feeders the 10% and 1% drop. Similar proportions might be presumed to hold for systems with other than 3 wires and in fairness the principle should be retained. On his own premises however Mr Leonard appears to be correct.

UEMC

UNITED EDISON MANUFACTURING CO.

44 WALL STREET,

New York, Nov. 1, 1889. 18

Thomas A. Edison, Esq.,

Orange, N. J.

Dear Sir:

Your favor of the 31st noted. I have sent Mr. de Freece to obtain the resolution of the Board of Aldermen of 1880 or 1881, which he promises to obtain in a few days, when I will send it to you promptly.

I have also the honor to acknowledge your favor respecting the alternating current system, and I heartily concur with your views. I sent you those papers, as it seemed to be my duty to do so.

Yours very truly,

J. H. Herrick,

President.

Mad.

UEMC

UNITED EDISON MANUFACTURING CO.

44 WALL STREET,

New York, Nov 2, 1889. 18

Ans Nov 6/89

Thomas A. Edison, Esq.,

Orange, N. J.

My Dear Sir :

I have had some difficulty in obtaining copies of the resolutions requested, but perseverence and a friend at court have secured them; and I have the pleasure of handing them to you herewith.

Yours very truly,

J. H. Herrick

President.

Enc.

Herrick

You will notice the UE Co have no right overhead at all. Judge Andrews answered it Can't you have Evening Post bring out this point as Andrews main point was that UE Co had made large investment under law.

E

[ENCLOSURE]

COPY.

RESOLVED, That the Brush Electric Illuminating Co. of New York is hereby authorized and empowered to lay, erect, and construct suitable wires or other conductors, with the necessary poles, pipes or other fixtures in, on, over, and under the streets, avenues, public parks, and places of the City of New York for conducting and distributing electricity and to the full extent that could, with the consent of the municipal authorities of the City of New York be given to any gas light company under or by reason of or in pursuance of an application made by any of the corporations especially referred to in Chap. 512 of the general statutes of New York for 1879. All excavations in street, removals and replacements of pavements or sidewalks to be done under and according to the direction of the Commissioner of Public Works, and under such further conditions as to security against damage to sewers, water pipes, gas pipes, or other pipes as may be prescribed by his Honor the Mayor, Comptroller and Commissioner of Public Works, who are now by law authorized to make provision for lighting the streets of the city.

Whenever at any time any permit shall be granted to open the streets, pavement or sidewalks for the purpose of laying the tubes, wires, conductors, or insulators of the company, a sum equal to one cent per lineal foot of streets occupied under such permit shall be paid to the city.

Nothing herein contained shall be deemed to authorize the

[ENCLOSURE]

laying of any mains or pipes for conveying, nor the erection of any lamps or lamp posts to be used for illuminating by gas?

Adopted by the Board of Aldermen April 12, 1881?

Received from Mayor April 12, 1881. In Board adopted May 3, 1881, 3/4 of all the members elected voting in favor thereof?

Yours very truly,

[ENCLOSURE]

COPY.

RESOLVED. That the United States Illuminating Co. of New York is hereby authorized and empowered to lay tubes, wires, conductors, and insulators, and to erect lamp posts in the streets, avenues, parks, and public places in this city, for the purposes of conveying, using and supplying electricity, or electrical currents for purposes of illuminating, all excavations in streets, removals, and replacements of pavements or sidewalks to be done under and according to the direction of the Commissioner of Public Works, and under such further conditions as to security against damages to sewers, water pipes, gas pipes, or other pipes as may be prescribed by his Honor the Mayor, the Comptroller and the Commissioner of Public Works, who are by law now authorized to make provision for lighting the streets of the city.

Whenever at any time any permit shall be granted to open the streets, pavements or sidewalks, for the purpose of laying the tubes, wires, conductors and insulators of the company, a sum equal to 1 c. per lineal foot of streets occupied under such permit shall be paid to the city.

Nothing herein contained shall be deemed to authorize the laying of any mains or pipes for conveying gas, nor the erection of any lamps or lamp posts to be used for illuminating by gas.

Adopted by Board of Aldermen April 12, 1881. Received

[ENCLOSURE]

from his Honor the Mayor April 19, 1881, with his objections thereto. In Board of Aldermen May 3, 1881, taken up, reconsidered, as provided in Sec. 13, Chap. 335, Laws of 1873, and adopted, notwithstanding the objections of his Honor the Mayor 3/4 of all the members elected voting in favor thereof.

Your favor of the
to obtain the resoluti
men of 1880 or 1881, which he promises t
Public Works,
when I will send it to you promptly.

I have also the honor to ackno
the alternating current system, and
your views. I sent you those papers, a
to do so.

Yours very tru

UEMC

UNITED EDISON MANUFACTURING CO.

44 WALL STREET,

New York, Nov. 7, 1889. 18

Thomas A. Edison, Esq.,

Orange, N. J.

My Dear Sir:

I have the honor to acknowledge your favor of the 3d inst. I may say in reference thereto that we have been negotiating for franchises in Jersey City with Governor-elect Abbett, who at one time intimated through a second party that he would be able to get them for us. Mr. Hix has also done some work at Newark; so that if we do not at present show results, it has not been for lack of effort, which will be continued.

I sent Mr. Hix to Baltimore last week. He looked over the ground and reported that until after election he was doubtful if efficient work could be done. The Legislature meets this year, and Hix is very sure we can accomplish something this season. I shall spare no effort and will go to Baltimore myself if I find that I can accomplish anything, which may be possible, as I have a personal acquaintance with Senator Gorman, who is a great political power in Maryland. I really expect to get a station into Baltimore this winter.

I will take up the suggestion contained in your favor of the 6th about Judge Andrews' decision and the Evening Post, and see what can be done. It may take a few days.

Yours very truly,

J.N. Herrick, President.

Stevens

UNITED EDISON MANUFACTURING CO.,

DEPARTMENT OF ENGINEERING,

44 WALL STREET,

NEW YORK, Nov. 7th. 1889 18

Thomas A. Edison, Esq.

Orange, N. J.

Dear Sir : -

The bearer Mr. H. T. Edgar, whom I mentioned as just having completed canvassing Omaha and Sioux City, and whom you wished to see personally in the Buffalo matter, will present this. He has one of my canvass field books. Please see if you have any additions or alterations to make, and oblige,

Yours very truly,

J. L. O. Sheaffer

Chief Engineer of Construction.

Vol. Central Stations

UNITED EDISON MANUFACTURING CO.,

DEPARTMENT OF ENGINEERING,

44 WALL STREET,

NEW YORK, November 12th. 1889

Mr. Thomas A. Edison,
Orange, N. J.

Dear Sir : -

As requested by Mr. McGowan, a few days ago, I send you herewith blue print maps of Fall River, Mass., Newburgh, N. Y., Brockton, Mass., Tiffin, Ohio, Williamsport, Penna. and Shamokin, Penna.

These plants were installed by the old Construction Company.

Trusting these will serve your purpose, I remain,

Very truly yours,

J. C. Henderson,
Chief Engineer of Construction.

New York, November 15th. 1889

Mr. T. A. Edison,
Orange, N. J.

Dear Sir : -

I have a slightly sarcastic note from Mr. McGowan, giving me Hail Columbia for not getting the blue prints of certain towns out to your Laboratory quick enough.

The request was received in my office on the afternoon of the 7th.

The 11th. Monday was the first fair day, consequently they were printed and sent with a note, of which the above is a copy.

Very truly yours,

J. C. Henderson

Chief Engineer of Construction.

UEMC

N.Y.6

UNITED EDISON MANUFACTURING CO.

44 WALL STREET,

Ans. Nov. 23/89

New York, Nov 13th 1889

Plenty of money at these rates

My Dear Edison

I have just returned from Pittsburg where I have made arrangements to form a Company of $500,000 Capital We put in no money, but get 30% for our patents and return to them 15%. I send you the enclosed to show you what prices our opponents are getting. They use metres and run their lamps at greater incandescence than we do. They run a continuous current system for power. Coal is very cheap and gas sells at 75 cents per M. I think our Company there can make money. I have electrics this City on the danger of alternating systems and our friends there will keep it up. Return these printed circulars to me

Yours Ever

UEMC

ADDRESS IN REPLY,
"UNITED EDISON MFG. CO."

UNITED EDISON MANUFACTURING COMPANY,

DEPARTMENT OF
CENTRAL STATIONS,
(IN TOWNS UP TO 20,000 POPULATION.)
AND
ISOLATED PLANTS.

65 FIFTH AVENUE,

NEW YORK, November 13, 1889.

Thos. A. Edison, Esq.,

Llewellyn Park, Orange, N.J.

Will make the test now—

Dear Sir:--

A Mr. Chas. T. Snedeker called yesterday morning to say thathe had invented an insulation for wires which he claims is both fire and moisture proof. He desires that we make a test of this insulation for him, and he proposes to send us for this purpose a sample of 500 or 1000 feet of his wire.

Knowing that you have ample facilities for making such tests, we write to ask you if you will make this one for us, when the wire arrives, and also whether in general you are prepared to make such tests for us from time to time, and about what your charges will be for the same.

Mr. Snedeker's address is #1 Exchange Building, Chicago.

Truly yours,

S. D. Greene

Ass't to Gen'l Manager.

Stations

UNITED EDISON MANUFACTURING CO.,

DEPARTMENT OF ENGINEERING.

44 WALL STREET,

NEW YORK, Nov. 15th, 1889 18

T. A. Edison, Esq.

Orange, N. J.

My Dear Sir : -

As the Central Station for Milwaukee cannot possibly be in operation before the spring of 1890, there is abundant time for us to install Direct Triple Compound Steam Dynamos and at once erect our Central Stations on the most approved plan. It will reduce space and first cost to a minimum, while getting the maximum efficiency of fuel, with the least amount of labor.

If this meets your views I will put the matter through at once and then submit it to you for correction and alteration.

I remain,

Very truly yours,

Chief Engineer of Construction.

VEMC

UNITED EDISON MANUFACTURING CO.,

DEPARTMENT OF ENGINEERING,

Palmer House
Toronto Canada

~~44 WALL STREET,~~
~~NEW YORK,~~ 18 Nov 1889

A. O. Tate Esq.
Orange N.J.

Blue print returned to Engg March 7/1890. CLL

My dear Sir

I beg to enclose for Mr Edison's inspection & probable acceptance, Sketch of a Coupling box arranged in a new manner. As you are aware the present style is to fill the entire box with compound & when necessary to open it, there results a tedious job melting the compound with a blow lamp, not to speak of the dirty condition of all the couplings inside. Cummings & I have worked up this between us. Let me hear from you soon, if there is anything in it.

Yours very truly
Charles G Hinds

Stamp: VENC

UNITED EDISON MANUFACTURING CO.,

DEPARTMENT OF ENGINEERING,

44 WALL STREET,

NEW YORK, Nov. 20th. 1889 18

Mr. Chas. Batcholor,

Edison's Laboratory,

Orange, N. J.

Dear Sir : -

Mr. Edison stated to me yesterday that I could get the drawing of his "Direct Connected Multipolar Dynamo", from you.

He also stated that he has them from 100 to 1200 ampères output.

What we desire, as soon as possible, is blue prints of about 400, 600 and 1200 ampère machines, of about 140 volts each, running at say 220 revolutions.

If you will let me have these as soon as possible,(as we want to embody them in drawing of our new engine,) I will be greatly obliged.

Yours very truly,

J. R. Henderson

Chief Engineer of Construction.

Also VEMC

UNITED EDISON MANUFACTURING CO.,

DEPARTMENT OF ENGINEERING,

44 WALL STREET,

NEW YORK, November 22nd, 1889

Nov 25/89

T. A. Edison, Esq.

Orange, N. J.

Data pd'd Nov 29/89

Dear Sir : -

Mr. Hastings having informed me that you intended to look into the matter of the proposed extension for Newport, R. I. - I enclose the whole data with reference thereto; among them blue print of the district requiring lighting. It is from a canvass in 1884. I wrote to find out if any changes had been made since then, in case a new canvass was required, Mr. Whipple answered saying he did not think so; if in your opinion however, a new canvass is necessary, I will have one taken immediately.

Yours obediently,

L. C. Henderson

Chief Engineer of Construction.

Enclosures.

VEMC

UNITED EDISON MANUFACTURING CO.

44 WALL STREET,

New York, Nov. 22nd. 1880. 18

T.A.Edison Esq.,

Orange, New Jersey.

Dear Sir:-

There is a great deal of business which comes to this Company from territory outside of the control, as originally contemplated by the contracts made between you and the Edison Electric Light Co. I refer to shipments to Japan, Sandwich Islands, Norway, Sweden, Portugal and other outlying countries. You will remember that these countries and a number of others are neither owned by this Company nor by any of the European or Australasian Companies, operating under contract with you. It is desirable that we should fill all orders of this kind coming to us for apparatus for electric light purposes. I would suggest to you the advisability of naming to us a royalty on shop prices which we can pass to your credit without any further communication with you. All these matters will come through my hands and I will myself be careful to see that no plants are shipped into territories covered by existing contracts of yours.

Yours truly,

First Vice President.

UEM C

ADDRESS IN REPLY,
"UNITED EDISON MFG. CO."

UNITED EDISON MANUFACTURING COMPANY,

DEPARTMENT OF
CENTRAL STATIONS,
(IN TOWNS UP TO 30,000 POPULATION)
AND
ISOLATED PLANTS.

65 FIFTH AVENUE,

NEW YORK, November 23, 1889,

A. O. Tate, Esq., Private Secty.,

Edison's Laboratory, Orange, N.J.

Dear Sir:--

Have to acknowledge receipt of your favor of the 22nd inst, in regard to testing of the insulation invented by Mr. Snodaker, for which please accept our thanks. We have written to-day to Mr. S., requesting him to forward the wire to us at once and will send it to you as soon as received.

Truly yours,

S. D. Greene

Ass't to Gen'l Manager

[TO ALFRED O. TATE]

UEMC

MEMORANDUM.

FROM DEPARTMENT OF ENGINEERING.

UNITED EDISON MANUFACTURING CO., TO

44 WALL ST.

New York, 18

My dear Terry. I send you a formal note which please do your best with. You may understand that I am doing this as a matter of dollars & cents not for glory. I think our idea is quite new & should be worth a goodly sum. How can you help me thro'? Also please let me know if Mr. Edison considers that a valve motion on a high speed engine which shows no flicker in the lamps

would be a ~~good thing to~~ have. If so. I can do it. I've puzzled over the idea for a long time but have struck the pay-dirt this time

Best regards to you all

Yours ever

R. G. Kling

VEMC

UNITED EDISON MANUFACTURING CO.,

DEPARTMENT OF ENGINEERING,

DICTATED TO STENOGRAPHER.

44 WALL STREET,

NEW YORK, November 29th. 1889

Thomas A. Edison, Esq.

Orange, N. J.

Dear Sir : -

I beg to acknowledge the receipt of your favor of Nov. 25th., stating that the canvass I sent you on the 22nd of Ochre Point-Newport, would not answer your purpose.

If you will kindly return to me all the data that I sent you, I will send a man to Newport at once, and will forward to you the new data as soon as received.

Yours very truly,

J. C. Henderson

Acting Engineer-in-Chief.

per V.B.

VEMC

UNITED EDISON MANUFACTURING CO.

44 WALL STREET,

New York, Dec. 6th, 1889. 18

Ans. Dec. 28/89

A.O.Tate Esq.,

Edison's Laboratory, Orange, N.J.

Dear Sir:-

I have your favor of the 7th enclosing letter from L.Oscar Browning & Co., Johannesburg, South African Republic.

Do you know whether this territory is controlled by the Australasian Company? Will you please look up Mr. Edison's contracts in relation to this matter and advise me further?

Yours truly,

Sam'l Insull

First Vice President.

Book Com. book

UNITED EDISON MANUFACTURING CO.,

DEPARTMENT OF ENGINEERING,

44 WALL STREET,

NEW YORK, December 9th. 18 89

Thomas A. Edison, Esq.

Orange, N. J.

Ans. Dec 10/89

Dear Sir : -

Enclosed herewith please find copy of letter dated Nov. 26th. to Mr. Frank McGowan, and his reply to same, under date of December 7th.

Please let me know if his reply embodies your views, and oblige,

Yours very truly,

J. H. Henderson

Acting Engineer-in-Chief.

Enclosures.

[ENCLOSURE]

UBMC

Copy.

November 26th.1889

Mr. Frank McGowan,

care of The Laboratory,

Orange, N. J.

Dear Sir : -

In regard to the canvass of CHICAGO that you asked for yesterday, I beg to state that after careful search both at the vault and in this office, I find we have nothing but the canvass made in 1887, on which the determination was made for the present station.

The canvass that you desire, I am under the impression was made by the Western Edison Company, who controlled Illinois and three adjoining States.

These papers I have not control of, neither do I know where they are.

If the canvass of 1887 will be of use to you, I shall be pleased to furnish it, and remain,

Very truly yours,

Signed. J. C. Henderson,

Acting Engineer-in-Chief.

[ENCLOSURE]

Bom. 600

Copy. Orange, N. J. December 7.1889

J. C. Henderson, Esq.

New York City.

Dear Sir : -

Replying to yours of the 26th. ulto. have to say that canvass of 1887 of Chicago will answer Mr. Edison's purpose. I have been absent from the Laboratory for the past 10 days which accounts for delay in writing sooner.

Yours truly,

Signed. Frank McGowan,

Tate informs me that data relative to Ochre Point, Newport, has been sent you.

VEMC

UNITED EDISON MANUFACTURING CO.,

DEPARTMENT OF ENGINEERING,

44 WALL STREET,

NEW YORK, December 10th. 1889

T. A. Edison, Esq.

Orange, N. J.

Dear Sir : -

Along with this I mail you two blue prints of the "Ochre Point" District of Newport, copy of letter from Mr. Whipple in answer to mine, also copy of my letter to him.

It was a very difficult matter to get at the measurements of the different houses from side walks, etc. as the owners all being away permission to enter the grounds was absolutely refused in almost every instance. Our canvassers however with Mr. Whipple's aid and insurance maps, were able to get at distances, and also the number of gas jets contained in each dwelling, quite a large number of the buildings having already been wired by Mr. Whipple in anticipation of the lighting .

The soil all over this district is easily excavated being of a gravelly and sandy nature.

The streets and side-walks are all macadamized, and are separated by a granite curbing.

Medium size trees are planted along the streets, at about 20 feet apart. There are no poles in the district, nor will any be allowed under any consideration under City Ordinance.

I also send list of the number of lights corresponding to

the number of dwelling houses. The lights for stables, lodges, &c. are included in the houses, and equal for stables about 10 lights, and for lodges about 5.

Green Houses are marked thus ⊠

Stables and Lodges thus ×

The four buildings marked "49", are a group of similar cottages, each with 25 lights.

Trusting that this will be all the information necessary, I remain,

Yours very obediently,

J. C. Addison

Acting Engineer-in-Chief.

[ENCLOSURE]

Copy.

Newport, R. I. December 9th.1889

J. C. Henderson, Esq.

44 Wall Street,

New York City.

Dear Sir : -

I return Blue Print as you desired. Feeders in yellow, Mains in red. Feeder A. comtains 520,000 C. M. Feeder B. 112,000 Feeder C. 150,000. All Mains contain 80,000 C. M.

Truly yours,

Signed. John Whipple, Jr

Supt.

[ENCLOSURE]

Copy.

New York, December 7th.1889

Mr. John Whipple, Gen'l Mgr.

Edison Electric Ill. Co.

Newport, R. I.

Dear Sir : -

I mail you under separate cover a blue print map of your territory, on which Mr. Edison desires to have marked IN RED the location of every main, and the size of same, and IN YELLOW the location and size of each feeder, showing the route of the wires, and more particularly the point at which they stop. This will enable him to obtain an intelligent understanding of the situation regarding the lighting of Ochre Point.

In my letter of the 6th. I desire to correct the sentence reading " especially with reference to where they start from station. " This sentence should be "especially with reference to where they stop or end. "

Kindly return this map with the desired data, at your earliest opportunity, and oblige,

Very truly yours,

Signed. J. C. Henderson,

Acting Engineer-in-Chief.

[ENCLOSURE]

Map No.	No. Lights,
1	200
2	100
3	50
4	50
5	150
6	150
7	75
8	300
9	300
10	40
11	50
12	40
13	100
14	300
15	100
16	200
17	150
18	80
19	100
20	300
21	50
22	50
23	300
24	100
25	100
26	100
27	75
28	50
29	75
30	50
31	50
32	50
33	25
34	25
35	25
36	50
37	50
38	50
39	25
40	25
41	25

[ENCLOSURE]

42		30
43		25
44		50
45		50
46		25
47		30
48		35
49	4 cottages ea.	25
50		35
51		35

☒ Green Houses,

✕ Stables, Lodges.

The Lights for Stables and Lodges are included with the houses, and ~~the~~ stables 10, Lodges 5.

E. H. Co - Kansas

San Francisco, Cal., Dec. 26th, 1889.

My Dear Edison;

I enclose you two letters from Weekes, which will explain themselves.

Please render him any assistance you can, as he is having a very hard fight of it in Kansas City. He has a Station of 5000 Lamp Capacity when there is a demand for 15,000; but the stock cannot be placed in Kansas City because every man there places his money in real estate, and the Arc Company's Stock is worth 150, par value 100, simply because they have a large contract with the City. Weekes is trying very hard to place some more stock.

There is a fair prospect of placing a Company of $200,000, in Salt Lake City, Utah. R. M. Jones, (whom you know) is pushing it all he can; and if anybody can place stock in Salt Lake City demanding 30 per cent on first capitalization, and30 per cent on all increases, I think Jones will do so.

This is the best city for a plant that I have seen. Gas is very high, because Gas Coal is imported, and is very poor at that. There is an Arc Company with the Bush System and very few incandescents. The difficulty will be to get franchises, as we are so tied up here with the

Ladd Estate that I will not make any move whatever without consulting a lawyer, so as to prevent any law suits or complications hereafter.

The details I have written to Mr. Herrick, and have kept him fully posted.

Wishing you a Merry Christmas,

I remain,

Yours Truly,

W. Preston, Jr.

1889. Electric Railway (D-89-44)

This folder contains correspondence and other documents relating to Edison's involvement in electric railways. Some of the documents pertain to the acquisition of the Sprague Electric Railway and Motor Co. by the Edison General Electric Co. and to related stock transfers involving Edison. There are also two reports dealing with the financial condition of the Sprague company.

Approximately 60 percent of the documents have been filmed. The following categories of documents have not been filmed: meeting announcements; letters of transmittal; requests for information about Sprague products.

Related material can be found in D-89-38 (Electric Light - Edison General Electric Company).

Copy

Report on

Sprague E. Ry & Motor Co.

Dec. 31st/98

for E. D. Adams

by

J. H. McClement

PRELIMINARY REPORT.

-on-

Financial Condition and Business of SPRAGUE ELECTRIC RAILWAY and MOTOR COMPANY

December 31st, 1898.

BALANCE SHEET as accounts by their books December 31st, 1898.

A S S E T S.		
PROPERTY ACCOUNTS.		
Machinery, tools & Patterns	$36,908.05	
Furniture & Fixtures	2,725.99.	
Manufactured & Raw Materials (on hand)	56,035.56.	$95,669.10
WORK IN PROGRESS.		139,413.68
INVESTMENTS.		
Bonds of Richmond, Va. Co.	40,000.00	
Bonds of Akron, O.	20,375.00	60,375.00
Cash & Accounts Receivable		79,424.01
TOTAL ACTUAL ASSETS.		$424,907.79
CONTINGENT, PATENT & EXPERIMENTAL ASSETS.		
Patents.		$832,500.00.
Experimental.		
Street Ry. Experimental Expenses	$65,916.99	
Other do do.	66,468.43.	
Elevated Railroad do.	22,154.38.	$154,540.50
TOTAL ASSETS CLAIMED		$1,261,948.09.

L I A B I L I T I E S.

CAPITAL STOCK.		
Issued for cash,	$317,500.00.	
Issued for patents,	682,500.00,	$1,000,000.00.
ACCOUNTS & BILLS PAYABLE.		
BILLS PAYABLE.		
Edison Machine Works,	$84,833.71.	
F.J.Sprague,	41,484.87.	
E.H.Johnson,	20,000.00	
Bank Loans	30,000.00	
Sundries,	28,297.88	
	$195,118.86	
ACCOUNTS PAYABLE & OPEN ACCOUNTS.	53,532.67	$248,650.53.
PROFIT & LOSS.		
Surplus	157,406.78.	
Less accrued & General expenses	124,111.02	13,297.76.
		$1,261,948.08.

EXPLANATION OF ITEMS ON BALANCE SHEET.

A S S E T S.

Property Accounts,

Machinery & Tools $6,908.05

This represents Machinery and Plant at their Factory in West 30th St. No charges to depreciation have ever been made, and the above charge is at cost.

I have had the inventory examined by a competent party and he reports the present value to be approximately,	$35,650.00.
Deficiency,	11,278.05.
FURNITURE & FIXTURES.	$ 2,723.69
For General offices, charges at cost there should be an allowance made for depreciation, say, 25 %,	680.92.
Making Net Value	2,042.77.
MANUFACTURED & RAW MATERIALS ON HAND.	$56,063.36
Add amount of materials etc. charged on books to "Work in progress Account" representing, partly, experimental accounts, and partly deficit for placing too low a Shop or cost price upon articles manufactured.	27,285.18
	83,286.54.
Amount of Material on Hand represented by Inventory Jan. 1st, 1910	41,505.82.
Excess of charges in books over amounts per Inventory,	41,780.82.
Deficiency in Machinery & Plant as above	11,278.05.
Depreciation on Furniture &c.	680.92.
Total deficiency in Property Accounts	53,749.89.
WORK IN PROGRESS.	$129,415.66.

This represents work performed on Street Railway contracts not yet completed.

Work in Progress (continued)	Brought For'd.	$181,215.88.
Principally Scranton, Boston, Cleveland &c. as appears in Supplementary Report.		
From this should be deducted material accounts at the shop (see explanation under Property Accounts pages 2 & 3)		$27,235.13
Net Amount of Work in Progress per B/S.		$162,180.50
Proportion of General Expenses (see page)		15,436.36.
		$177,345.86

INVESTMENTS.

Bonds of Richmond & Akron Cos.	$80,575.00.

These bonds were received in part payment for complete contracts, and taken at par, their market value would probably be about 80 or 85%.

CASH & ACCOUNTS RECEIVABLE.

Cash,	$18,185.87.	
Due from Customers,	152,255.53.	
Open Accounts,	3,870.84.	$174,992.24
Less Amounts received on account of Uncompleted Contracts credited to Customers Account.		95,568.36
Amount as per Balance Sheet.		$79,424.01.

Amount brought forward,		$74,434.01
From this balance the following deductions		
should be made.		
Proportion of Uncollectible, dead, and		
disputed accounts, viz:--		
Disputed and Bad Accounts Amount to	$19,331.11.	
Of this amount there will probably		
be realized.	12,057.32.	
To be charged off	7,224.07.	
Add amount of commissions accrued		
but not taken on books, being the		
proportion due on payments, account		
work in progress per preceding page	10,342.11.	$17,566.18.
Present value of cash & collectible accounts.		$81,857.05

CONTINGENT, PATENT & EXPERIMENTAL ASSETS.

PATENTS.

Amount of Capital Stock issued to F.J.Sprague for	
Original Patents	$425,300.00.
Issued to E.H.Johnson for special Patents	35,000.00
Issued recently for Storage Battery Patents	
to E.H.Johnson and F.J.Sprague, and by them	
issued to trustee to be sold for benefit	
of Company at best price obtainable	$147,700.00.
Amount charged per Balance Sheet	$982,500.00.

Brought Forward.	$382,300.00
There remains in the hands of Trustee	
1150 Shares which are to be sold at best price ob-	
tainable to furnish working capital for the	
Company.	115,000.00.
The actual charge to this account at present date	$338,200.00.

The amount deducted ($115,000.00) being practically Stock in Treasury unissued. Of this Stock is used for patents, a certain portion was issued as bonus to cash subscriptions, making the cash stock cost investors about 80¢.

EXPERIMENTAL.

Street Railway Experimental.

The bulk of this charge represents the experimental and mistake account in equipping the Richmond and Wilmington Street Railways, also the excess of cost of these roads over the amount realized, or to be realized.

It is divided as follows:-

Richmond.	$54,623.60
Wilmington.	5,252.38.
Sundry Factory Experiments.	6,040.40.
Amount per Balance Sheet,	$65,916.98.

EXPERIMENTAL ACCOUNT.

Includes Factory Experiments, Plans, Drawings, Statichery and Printing, Salaries F.J. Sprague & E.H. Johnson, Travelling Expenses etc. Most of the items properly belong to General Expenses. $35,371.91.

Or the indications are that there is a net profit of 22 64/1000 % on future Street Railway Contracts. The factor of cost of securing the business is provided for in the estimated cost, but not the cost of future experiments and other general charges.

The Company have just developed a new horse car motor, which developes 15 h.p. instead of 7 h.p. the present capacity, and the cost of manufacture is but slightly increased. With the advantages thereby secured and the reforms inaugurated and to be inaugurated, good results for the ensuing year should be secured.

THIRD. General Conclusions.

From my estimation I believe,

1st: There is money in the business if properly handled

2nd: Motors enjoy a good reputation and have been widely advertised.

3rd: The Street Railway business if properly conducted with ample working capital and with good management will yield handsome profits.

4th: The Company is capitalized entirely too high for its property, rights, patents and good will.

5th: It is not under good management in some departments, but think it is being improved.

6th: It is costing too much to conduct the business.

7th: If the reforms indicated above are carried, I think the Company can soon take a turn towards prosperity.

Brought Forward,	$30,871.51.
Work on Pump Motor	1,811.65
Experimental Motors	1,382.00
Experimental Pumps	101.80.
Standard Motor Experiments	7,351.38.
Total	$39,268.34.

Elevated R.R.Experiments

New Elevated Ry.Car.	$7,881.44
Old Elevated Ry.Car.	11,600.84
Elevated Motor.	2,978.80.
	$22,154.88

The probable actual value of this account in material is, say, 35 1/3%. $7,879.25.

L I A B I L I T I E S.

Capital Stock (authorized and issued)	$1,000,000.00
Of this amount there remains in hands of Trustee to be used for benefit of Company, see page 8.	115,300.00.
Balance Outstanding.	$882,700.00.

Other Liabilities. Accounts and Bills Payable are sufficiently explained on Balance Sheet.

PROFIT & LOSS ACCOUNT.

Surplus March 1st.1913, end of fiscal year. $31,814.37.

Business since that date to Jan.1st.1914.

as follows, viz:--

Class of Work.	Sales.		Cost of production and installation.		Profit.	
Stationary Motors.	$114,047	15	$57,547	43	$56,499	72
Renewal Orders	42,585	48	30,051	52	12,532	96
Railway Contracts	300,014	67	236,480	47	35,533	10
	$456,646	30	$324,108	29	$102,586	81

Surplus March 1st,1913	$31,818.37
Add net Profits as above	102,586.81
Total,	$137,408.78.
The total General Expenses charged during the same period (a portion of which belongs to Work in Progress)	$124,111.02
Surplus shown on Balance Sheet	$13,297.76.

After making the changes as outlined in the foregoing explanation the Balance Sheet will compare with accounts per their books as follows, viz:--

A S S E T S.

	Per Books	Corrected Balance Sheet	Decrease	Increase.
Property Accounts.				
Machinery & Tools	37,103 00	25,830 00	11,273 00	
Furniture & Fixtures	2,725 94	2,042 77	680 02	
Manufactured & Raw Materials	86,065 56	41,503 82	14,557 74	
Work in Progress	139,413 68	177,646 18	11,767 50	
Investments	60,375 00	54,337 50	6,037 50	
Cash & Accts.Receivable	78,424 01	61,357 05	17,063 96	
Contingent,Patent & Experimental				
Patents	382,500 00	333,200 00	119,300 00	
Experimental	154,340 30	154,340 30		
Profit & Loss Deficiency		46,541 25		$46,541.25
	$1,281,948.09	1,129,350.35	132,327 76	

L I A B I L I T I E S

Capital Stock	$1,000,000 00	$880,700 00	$119,300 00
Bills & Accounts Payable	248,360 33	248,650 32	
Profit & Loss	13,287 76		13,287 76
	$1,281,948 09	1,129,350 35	132,327 76

The following is a statement of Actual Property and Assets.

ASSETS.		
Quick Assets.		
Net value of cash and accounts receivable.	$31,357.04.	
Work in Progess	177,845.43	
Investments	84,337.50	
Manufactured & Raw Materials	41,303.32.	
Total Quick Assets.		$335,846.05
Dead Assets.		
Plant, etc.	$27,672.77	
Value of Material charged, Experimental Accounts, say,	7,378.24	35,051.06
		$370,897.09
Deduct Liabilities,		249,650.33
Net Assets.		$121,746.76.

or $15 63/100 per share on Capital Stock at present outstanding $800,700.00.

Value of Patent Property and Experiments not considered in above statement.

According to the books the amount of Cash realized from sales of Stock amounted to $317,500.00

Net Assets per above statemt	121,746.76
Depreciation in Assets in developing business and experiments	$195,753.24

Statement of Earnings & Expenses from Mar.1,1911 to Jan.1,1912.

STATIONARY MOTOR BUSINESS

	No. of Motors	Selling Price	Cost of Motors	Net.
March	34	$10,210 00	$5,423 02	$4,786 98.
April	51	11,117 00	5,607 59	5,509 41
May	60	12,125 35	7,108 61	5,017 54
June	50	10,313 50	6,057 64	4,735 86
July	45	8,585 25	5,341 33	4,251 92
August	59	11,347 25	5,348 04	5,309 21
September	35	8,023 75	5,055 47	4,638 28
October	60	14,127 50	7,228 08	6,979 44
November	42	13,551 25	5,180 63	7,970 62
December	30	11,420 00	4,023 84	6,446 16
Totals	450	$114,087 15	$57,507 45	$56,495 72

Total Profits on Stationary Motor Business $56,495.72

Street Railway and other Contracts

Total Sales (Contracts)	$500,013.57	
Cost of same (less amts. charged to Experimental expenses)	$266,460.47	$33,556.10
		$90,057.82

Renewals.

Sales,	$42,583.46	
Cost	30,051.38	$12,532.09
Total per Balance Sheet.		$102,589.91

Brought Forward,		$102,536.91.
From this amount should be deducted proportion of General Expenses and cost of doing business, viz:--	Mar.1,1918 to Jan.1,1921.	
Commissions	$27,556.13	
# Salaries	42,242.10	
# Rent & Light	5,141.76	
# Stationery & Printing	307.02	
# Plans & Drawings	1,176.33	
# Patent & Legal Expenses,	7,227.51	
# Advertising,	11,035.77	
Insurance	291.25	
Interest, Discount & Exchange	6,901.10	
Maintenance & Repairs,	72.35	
# Travelling Expenses,	3,157.77	
# Sundry Expenses	1,681.20	
Taxes,	1,109.14	
Royalties	4,562.35	
	$110,550.37	
Less proportion charged in salaries acct.being proportion of salary E.H.Johnson paid in stock applicable to previous years business	$21,000.00	
Carried forward.	$89,550.69.	$102,536.91.

Brought Forward,	$89,550.57	$102,552.91
Of this $89,550.57 the items marked thus ## are properly divisible between completed work and work in progress, viz:		
Total	$89,550.57	
Deduct proportion to be pro-rated	43,285.38	
Balance chargeable against income	46,275.19	
Proportion of $43,285.38 chargeable (leaving $15,485.38 chargeable to work in progress)	$30,800.00	74,075.19
Net Earnings for 6 months		$28,514.62

Equivalent to$56,01& per annum, or 4 3/10 % on stock outstanding.

During the same period Experimental Expenses increased as follows:-

Street Railway Experimental	$37,411.66.
Standard Motor do	4,344.11.
Experimental Expenses	29,277.32.
Pump Motor Experiments	1,835.46
Elevated Motor,	2,973.80
	$98,360.93

In all fairness it might be said that while a large part of the above represents actual Experimental Expenses, I consider a large percentage is in reality General Expenses, especially the item

called "Experimental Expenses" $28,277.36. This would wipe out the surplus for nine months' business, leaving the losses for the Richmond and other contracts in Street Railway Experimental to be met in subsequent years, upon the theory that the expenditure was necessary to development the business and perfect the system.

They have also accrued commissions on payments made upon work in Progress which is a proper charge against the above, amounting to (per page 8) $10,342.91

And a depreciation in Stock and Plant accounts amounting to (per page 3) $55,749.36.

Accepting a most rigid view of the matter the results would show:

Net Earnings 9 months as shown,		$28,514.82.
Deduct:		
Experimental Expenses, (see explanation page 13)	$28,277.36.	
Other Experimental charges and losses on Street Ry. Work charged during 9 months.	87,073.04	
Accrued Commissions,	10,342.91	
Proportion Depreciation in Property & Stock Accounts to one-third of $55,749.36	$17,916.65	$124,610.47.
Loss on 9 month's business.		$96,095.65

This is upon the assumption that the Experiments &c. necessary to develop the business and the commercial losses incident to establishing the First street railway incurred during these months, are all

against the business.

I subjoin my own items of the business, viz:--

Net Revenue as Shown		$26,514.32
Deduct Experimental	$28,277.86	
Commissions	10,648.91	
Proportion Depreciation of Property Accounts, 1/3 of $53,748.80	17,916.33	
Proportion of Experimental Charges remaining after deducting the $28,277.86 being at a rate of 25% per annum or 18 75/100% on $128,262.41	23,496.70	81,034.18
Net Loss 8 months		$52,509.51

Respectfully submitted,

Signed, J.H.McClement.

New York January 31st,1885.

Copy

Supplementary Report

on

Sprague E. Ry & Motor Co.

December 31/88

for E. D. Adams

by

J. H. McClement.

Also

condensed copy

of

Balance Sheet.

SUPPLEMENTARY REPORT.

-on-

Financial Condition, Earnings and Business of the Sprague Electric Railway and Motor Company.

--o--

Having shown the bald facts as existing at present, I will now proceed to discuss the following points in explanation thereof, drawing my conclusions partly from information secured during the investigation, and partly from a general knowledge of the business, viz:--

1st. The reason for the losses shown.

2nd. The results accomplished.

3rd. General Conclusions.

Taking up these points seriatum:--

FIRST. The reasons for the losses.

Unquestionably the principal reason is extravagant management, and a desire to perfect the Railway system to the absolute satisfaction not only of the purchasers, but also of Mr. Sprague and the company; and is not attributable to the fact that the business is not lucrative if not properly conducted.

The principal channels for sinking money have been the Factory; the Installation and perfection of the first Street Railways; disproportionate amount of General Expenses to amount of business performed; Experiments and mistakes. It is natural that some losses should be incurred in developing and establishing a new industry, but the amount might have been made less if affairs were under proper di-

rection. Mr. Johnson has been able to give only a limited amount of time and attention to the affairs of the Company, and thus has not been familiar with the details of management, especially in regard to the expenses, errors of judgement and leaks occurring. The principal management devolved upon Mr. Sprague, who is extravagant in his ideas, and unsystematic in his work. It is a fact which is generally admitted that "it is like harnessing a wild mustang to a truck" to place business affairs, or the practical management of a business either in its mechanical or financial department, in the hands of a theoretical Engineer of any kind, especially one who has not had the advantage of a commercial training. Mr. Sprague, of course, has the incentive to make money for the company, and hence for himself, but perhaps the natural pride of an inventor to excel in his particular line may have greater weight; and not having proper restraint, he does not realize and get returns on an improvement produced before he is freely spending money to secure something better.

The factory was a fruitful source of expense without contributing adequate returns. The Railway system was put on the market before it was developed, and the experiments were made, and experience secured in the first installations. Mr. Sprague in his direction of the factory, spent large sums in the effort to secure proper appliances for the Railroad work, and supposing each time that he had the proper method or device he would order a sufficient number of them manufactured to equip the whole road, only to have them returned and the same process repeated. This was expensive experimenting and resulted in losses shown in Report charged to Street Railway Experimental, and

other Experimental Accounts. Besides these mistakes a large amount of apparently unnecessary work in the nature of experiments was performed without finishing any one thing; in other words, systematic results were not achieved or carried to their logical conclusion. Mr. Johnson has realized these facts and ordered the factory shut down, and all work done at The Edison Machine Works or other places under contract. This is a good move, and will place the oversight of the business in the hands of chiefs of the various departments who can follow a thing to its conclusion, and be held responsible for results. This will keep Mr. Sprague in check,

It will be noticed from the report that the Railway work has proved unremunerative thus far. I subjoin report of completed contracts to date with a fair percentage of General Expenses added to the cost, showing actual loss of $56,267.44.

It has been mentioned that the business is handicapped by excessive General Expenses in proportion to its business. The salary list alone amounts to $6,000 per month, viz:--

E.H.Johnson, President	$500.00
Frank J.Sprague, Vice President,	500.00.
John Wise, Counsel	500.00.
H.M.L.Harding, Gen. Agent. (on Commission, Average)	1500.00.
A.S.Bevan, Treasurer	208.33.
O.T.Crosby, Superintendent	500.00.
Bookkeepers, Clerks, Electricians,	2300.00.
	$6,008.33.

Other items of General Expense will be found in report.

SECOND. Results Accomplished.

1st: As shown in report they have established a Stationary Motor Business which is exceedingly profitable. The actual expense of conducting this business is small. The Agents of the Company sell the Motors on a commission at certain fixed prices, and the Edison Machine Works manufacture the Motors under contract at a price which allows the Sprague Company an average gross profit after deducting commissions of nearly 100 %. So the Company have an absolutely assured profit on every Motor sold. The profits on this business (exclusive of General Expenses) for 9 months ending Jan. 1st, 1886, as shown in Report amounted to $56,406.72, or equal to per annum, $70,624.85.

This business has developed and is developing rapidly, but has not b been pushed during the past year as much as it might have been, owing to the best energies of the Company having been devoted to the Railway business.

2nd: They have established a reputation in regard to Street Railway Work and have a large number of contracts on hand which will yield a good profit, if the business is properly managed. It is hoped that most of the mistakes and experiments have been made, and they have developed a commercially acceptable Railway System. It is therefore a question of management and competition as to whether they will lose or make money in the future on this branch of the business.

I subjoin a statement of contracts on hand and the estimated cost of same.

Respectfully submitted,

Signed, J.H.McClement.

New York Jan.31,1889.

[ATTACHMENT]

Copy.

The Sprague Electric Railway & Motor Co

Condensed Balance Sheet. Feb. 28th 1889.

Property a/cc.			
Work in progress.	18,004.85.	Capital Stock	1,000,000.00
Motors & Materials on hand	60,095.90.	accounts & Bills payable.	263,476.50.
Machinery & Tools	29,411.09.		
Sundries	8,851.89.		
	116,363.23.		
Cost of Patents.	565,700.00.		
Cost of Experimental Repairs & Expens. Railroad Equipment & other Exp'l work.	13,378.44		
Cost of developing & standardizing Railroad System	168,131.52		
	181,509.96.		
Investments.			
Bonds of Street Railway Co	50,000.00.		
Capital Stock in hands of Trustee (to be held for the Co's benefit)	107,300.00		
	157,300.00.		
Cash and Accounts Receivable			
Cash	6,029.05		
due from Customers	222,904.27		
	228,933.32.		
Suspense account	1,363.82		
Profit and Loss	12,446.17		
	1,263,476.50.		1,263,476.50.

Electric Railway

Law Offices

120 Broadway (EQUITABLE BUILDING)

EATON & LEWIS

S.B.EATON.
EUGENE H. LEWIS

Aug. 23/2/87 New York Feb. 15th. 1889

A.O. Tate Esq., Private Secretary,
Dear Sir:

Re Electric Railway Co. of the U.S. I am about preparing a statement of the existing rights of Mr. Edison and the Light Co. touching Railway Co. patents, etc., but before beginning work I would like to be sure that I have knowledge of every contract ever executed. If you will kindly refer to my letter to Mr. Edison, dated Oct. 1, 1888, you will find a complete list of Railway Contracts so far as I then had knowledge of the same. My impression is that you obtained information from the Light Co., or from some other source, of the existence of one or more additional contracts, not included in my said list. Will you kindly examine this matter carefully and let me know if you have obtained trace of any contracts in addition to those in my said list of Oct. 1. If you have, please give me dates and names of parties thereto.

May I beg of you to give this your early attention, as I would like to get to work on my report as early as possible. Thanking you in advance for your trouble, I remain,

Very truly yours,

S. B. Eaton

the transaction, and it would have perhaps been done to-day - if Mr. E. could have been reached. Will you be kind enough to see Mr. Von Thunday, and arrange to carry out the transaction as far as Mr. E. is concerned? I suggest this inasmuch as I leave the city to-day only to return next week. I will add that Mr. E. told Mr. V. within a week that he was ready to take up his share of the Sprague stock.

Yours truly

C. A. Peabody

Dictated

EGK

C. A. Peabody

Mills Building.

New York, July 31, 1889.

Dear Mr. Insull:

Mr. Johnson was ready and anxious to close the matter of the purchase of Mr. Edison's and Mr. Villard's United States Stock, inasmuch as the 3rd party to the agreed purchase of the 1500 shares of Sprague stock has not yet been settled with, Mr. Johnson stands ready to pay for 2/5 of the U.S. stock to Mr. E. & Mr. V., as I understand him, and, at the same time, he expects to receive 2/5 of the purchase price on account of the 1500 shares of Sprague stock. Mr. V. is ready to carry out

Sprague

EDISON ELECTRIC LIGHT CO.

16 & 18 BROAD STREET,

New York, Oct. 27/87

My D^r Edison

It is of the utmost importance to all concerned that you be personally present at the final discussion of the proposed contract between the Edison & the Sprague Co's. You are ignorant of many important facts which will receive from your consideration an interpretation widely different from that which you now put upon them in the light of

EDISON ELECTRIC LIGHT CO.

16 & 18 BROAD STREET,

New York,

their present aspect. I have just returned from an extensive trip West & South & cautiously you always will be glad to learn & which you will recognize as of the utmost importance to the general good. Come if possible.

Yours Truly

E H Johnson

Sprague

Delaware House, Port Jervis, N. Y. Nov. 13, 1889.

Thos. A. Edison,

Orange, N. J.

Dear Sir, -

I am about constructing an Electric Railway in this town. The authorities are desirous that it should be the storage system. To my mind it is not practicable. It is my intention to use the Sprague System.

Will you kindly give me your opinion as to the unpracticability of the storage systems of the present day. It will aid me very materially. When I called on you some eight months ago, you expressed, that it was a failure. I desire to use your opinion with the Board of Aldermen. Hoping to hear from you at an early date, I remain,

Very Respectfully yours

Frank B Sprague

Date = Say the use of Storage batteries for St Car Eng has no commercial element in it - It is used by speculators to guull the public but up to its simplicity and impracticability of Storage system for Electric Railroads

SPRAGUE
PLEASE ADDRESS REPLY TO THE UNDERSIGNED.

Personal

Sprague Electric Railway & Motor Co.

160 & 18 Broadway, New York.

Dear Mr Edison: Nov 23d 1889.

In view of the proposed changes which may soon take place by the consolidation of the Sprague Co. with the Edison Gen'l Co., & having been informed that you have expressed it as your wish that I should remain in the employ of the Company, I desire to state that an arrangement with this end in view is desired by me.

I would very much like to have a talk with you on the subject, and ask that you will kindly name for such interview the earliest date that will suit your convenience. Please advise me by telegraph.

Yours sincerely J. H. Vail

Sprague

THE CENTRAL STAMPING CO.

23 & 25 CLIFF ST.

P.O. BOX 1992

New York, Dec 30th 1889.

Thos. A. Edison, Esq.

My Dear Sir,

Excuse the unusual liberty I take. I was once introduced to you by Mr. Chas. Smith, when you had a shop in Ward St., Newark. I learn you are working on an independent street car which is soon to be tested in Orange. I am Chn of the Railroad Com. of Newark Council (am living at Bruila) & have spent 6 mos. investigating motors for street railways. Our roads run to and thro Orange & so we are mutually interested in making the right move. We have made a report (copy enclosed)

which is in the line of the storage or other independent motor, etc far as the electrical part of the question is concerned we recommend

1st — selection of very best motors, say "Thompson" or "Sprague" or "Short" or similar.

2d — All stock constructions, finish, inspection & plan filled — best, light, iron poles &c.

3d — etc expert (electrical) to supervise all,

4th — Safety cones over all, cross-guards

5th — etc deadly currents

6th — Storage battery substituted at earliest possible time.

Write you kindly address me a brief (envelope enclosed) stating if above is strictly adhered to, if danger to life is eliminated?

Most truly

Geo. W. Kelsey

Yours truly

Orville Wells

[ENCLOSURE]

Essex Passenger Railway Company and Newark and Irvington Street Railway Company.

Resolved, That the Essex Passenger Railway Company and the Newark and Irvington Street Railway Company be granted permission to substitute electrical or chemical motors for horse power on all their lines within the limits of the city of Newark, New Jersey, on the following terms and conditions:

First. That said motors be of the best quality of such pattern and construction as the Common Council shall approve.

Second. Before doing work of any description on the streets, the Companies shall file a plan with the Committee on Streets and Highways, to be approved by the Common Council before work begins, and the same shall be completed within one year from the date of such approval. The same Committee may employ an expert to supervise the work, at an expense not exceeding five hundred dollars, the cost of same to be defrayed by the Railway Companies.

Third. On the line extending from Second River through Washington and Belleville avenues, Broad street and Clinton avenue to Elizabeth avenue, storage battery or other independent motors may be run, and, on the above route (excepting as herein specified) no overhead wires or poles shall be allowed. On all other lines now operated by the above Companies (excepting as herein specified) poles and wires may be used on the following terms, viz.:

(*a.*) All materials shall be of the best pattern and selected by the Common Council, as provided for in Article Two of this agreement.

(*b.*) On Broad street between Raymond avenue and Market street, and on Market street between Arlington and Ferry streets, no additional poles shall be allowed, but wires may be strung (with consent of owners) on poles already standing, or the Railway Companies may arrange with the Electric Lighting Companies in these districts for new and more shapely poles, which shall serve both as lamp posts and guys, the object being to lessen the constructions already existing in the sections named. A like arrangement may be carried out wherever practicable, in other parts of the city. In no instance shall poles be allowed in the centre of a street.

(*c.*) All operating wires shall be furnished with safety guards to prevent telephone or other wires falling thereon. No currents shall be permitted which could in any wise endanger life.

(*d.*) Whenever storage battery or other independent motors are available on the Newark grades, they shall be substituted, and the overhead wires and poles removed.

The Common Council may designate by resolution the time of such removal.

Fourth. For such times as poles may be allowed, the City shall have the right to attach thereto a suitable number of wires for public use and when poles are abandoned, such of them as may still be needed for police, fire or other city wires, shall be left standing and become the property of the City.

Fifth. The Companies shall run a suitable number of open cars in summer, and closed cars in all seasons. Also special cars whenever necessary. All cars to be properly heated in cold weather, and well lighted the year round. Cars to be run at such headway, not exceeding twelve miles per hour, as the Common Council may determine.

[ENCLOSURE]

Sixth. The Companies to give transfers over their own lines (and each others lines) for a single fare, and with other Companies on such terms as may be arranged with such Companies, or in case of failure to agree, by the arbitrators hereinafter provided.

Seventh. In addition to the payment of the general tax, and conformity to all ordinances of the city now in force, or which hereafter may be enacted, the Companies shall, on the first day of May of each year, pay into the City Treasury two per cent. of their gross earnings, for the previous year, upon such lines as may have been equipped with motors, said payment to be accompanied by a sworn statement of an officer of the Company. Gross earnings shall be understood to include all receipts from railway traffic.

Eighth. In case of any disagreement between the City and the Companies named, on any matter connected with this permission, or with respect to any change in motive power, or as to any compliance with the terms of this agreement, the company interested shall, on demand of the City, submit the same to the decision of three arbitrators, to be appointed as follows: One to be the Mayor of the City (or in his absence or failure to act, some members of the Common Council, to be appointed by that body,) another to be a representative of the Railway Company, and a third chosen by these two.

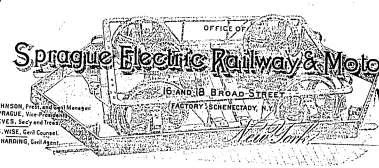
Ninth. Any failure on the part of the Companies to comply with the terms of this agreement, or with the ordinances of the City (except under orders of the Court,) shall be deemed sufficient cause to, and shall authorize the Common Council to revoke and annul this permission, and the same is granted on this express condition.

Tenth. Before exercising any permission hereby given, said Companies shall make, execute and deliver to the City, a contract, embodying the terms herein expressed, the same to be approved by the City Counsel.

GEORGE W. KETCHAM,
JOHN F. YOUNG,
Committee on Railroads and Franchises.

Introduced into Common Council by Alderman Ketcham, December 20, 1889. Laid over and ordered printed.

Sprague


OFFICE OF
Sprague Electric Railway & Motor Co.
16 AND 18 BROAD STREET
FACTORY, SCHENECTADY, N.Y.
New York
E.H. JOHNSON, Pres. and Gen'l Manager
F.J. SPRAGUE, Vice-President
A.S. DEVES, Sec'y and Treas.
JOHN S. WISE, Gen'l Counsel
H. McL. HARRING, Gen'l Agent

My D. Batch

No I did not. I have been waiting as patiently as I knew how for Mr Villard to consummate the deal he made with me which is to release me from the hard I had been carrying so long - But he don't do it - I think however

Sprague Motor business

Message from Mr Villard to Mr Edison through Mr Insull

Increase Sprague Co Stock to $1,600,000 ($600,000 8% Preferred)

Leave of this $200,000 in Sprague Treasury

Issue $400,000 Preferred to General Edison Co at par giving General Co $1,200,000 stock now in Sprague Treasury as a bonus to General Co

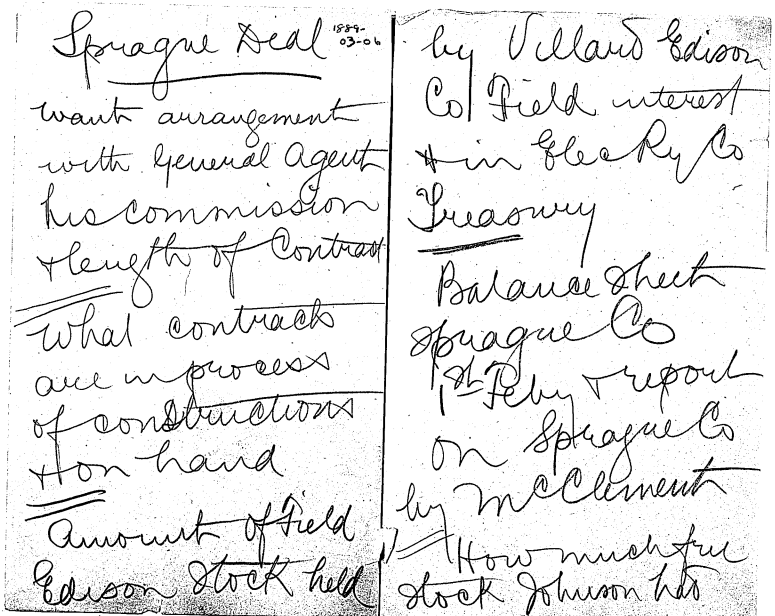
Capital	1,600,000
In Treas	200,000
	1,400,000
Pref	400,000
Bonus	120,000
Option	200,000
	720,000

But Sufficient Stock in Trust to give Control

3000 Villard
5000 Edison

General Cos Sloat
ab pur

[MEMORANDUM BY SAMUEL INSULL?]



Sprague Deal 1889-03-06

Want arrangement with General Agent his commission ~~Length of Contract~~

~~What contracts are in process of construction~~ ~~on hand~~

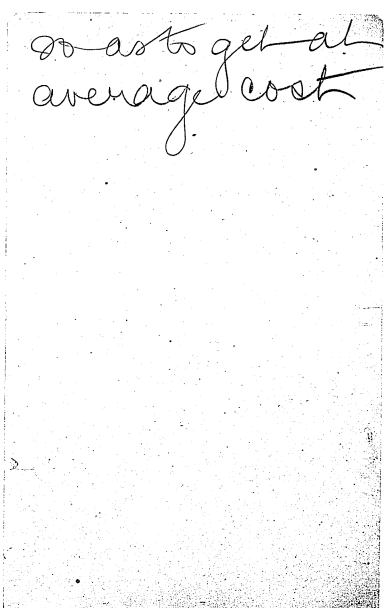
~~Amount of Field~~ Edison Stock held by Villard Edison Co | Field interest ~~in~~ Elec Ry Co

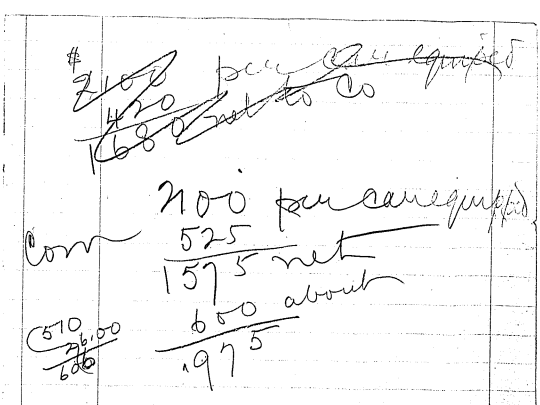
Treasury

Balance Sheet Sprague Co

~~1st~~ Feby ~~report~~ on Sprague Co by McClement

~~How much~~ Stock Johnson has


so as to get an
average cost


2100 per car required
420
1680 net to Co
2100 per car required
Corn 525
1575 net
570 about
25.00
600
1975

1889. Exhibitions - General (D-89-45)

This folder contains correspondence concerning electrical and industrial exhibitions in Canada, the United Kingdom, and the United States. Many of the letters are by T. C. Sharp, secretary and manager of the Birmingham Electrical and Industrial Exhibition.

Approximately 90 percent of the documents have been filmed. The following categories of documents have not been filmed: documents relating to exhibitions in which Edison did not participate; duplicate copies of selected documents.

Form No. 1. Exhibition

THE WESTERN UNION TELEGRAPH COMPANY.

This Company TRANSMITS and DELIVERS messages only on conditions limiting its liability, which have been assented to by the sender of the following message. Errors can be guarded against only by repeating a message back to the sending station for comparison, and the company will not hold itself liable for errors or delays in transmission or delivery of Unrepeated Messages, beyond the amount of tolls paid thereon, nor in any case where the claim is not presented in writing within sixty days after sending the message.

This is an UNREPEATED MESSAGE, and is delivered by request of the sender, under the conditions named above.

THOS. T. ECKERT, General Manager. NORVIN GREEN, President.

NUMBER	SENT BY	RECD BY		CHECK	
32	Ur	S.	10 pd	Joned	313

Received at ORANGE, N. J. 308 Jan 8th 1889

Dated Boston Mass 3

To A Tate

Please send account New Phonograph at Crystal Palace Exhibition London

Ger. H. Bartlett

Exhibition

GEORGE H. HARTWELL,
POPULAR LECTURER AND WRITER,
Electricity a Specialty.
Address: Care of BOSTON ADVERTISER,
Boston, Mass.

Jan 14/89

Boston, Jan.8th, 1889.

Dear Mr.Tate:-

Yours of the 2d inst. was duly received, and please accept thanks for the information contained. I telegraphed you a day or two afterward about account of Phonograph at Crystal Palace Exhibition, London, as I wanted to, if possible, obtain an account but fear you may not have understood the message fully. Will you kindly tell me if you have such an account, or where I could obtain one, as I want very much to refresh my memory about that particular occasion, which, as I recollect, was in last July or August. If you will please let me know as soon as convenient, it would greatly oblige me. Kind regards to Mr.Edison, if he has returned.

Yours very truly,

Geo H. Hartwell

Proposed Electrical and Industrial Exhibition

County Chambers
Corporation Street
Birmingham
January 8th 1889

Dear Sir,

Referring to our letter asking if you would kindly permit us to use your name as a patron of the above exhibition The Committee is anxious to have your name added to the number given in the enclosed list.

We are instructed to say that no responsibility will be incurred by your patronage

Awaiting your reply which we trust will be favourable

We are dear Sir
On behalf of the Committee
Your obedient Servants

[signature] President

F.C. Shaw Secretary

Thomas A Edison Esq
Menlo Park
New Jersey
U.S.A.

Exhibit.

GEORGE H. HARTWELL,
POPULAR LECTURER AND WRITER.
Electricity a Specialty.
Address: Care of BOSTON ADVERTISER,
Boston, Mass.

Boston, Jan. 12, 1889.

Dear Mr. Tate:-

Yours of the 8th is received, for which I am obliged. The matter of the Phonograph at London Crystal Palace Exhibition, that I have reference to, was about the showing of the machine there some little time after Col. Gouraud and Mr. Hamilton went to England last summer with the machine. I think that it showed action there such as the reproducing in a large hall of the chorus and instruments, making it, practically, an exhibition machine. Am I correct in my supposition? I do not find account of it in any of the papers here, although I think it was in the Herald some time last August. There was quite an account of it but I fail to find it. If you have such an account, or any account of the performance, or can get it or put me in the way to obtain it, I would be very greatly obliged. I am sorry to trouble you but I hardly know how to get at what I want, otherwise. An early reply will oblige,

Yours very truly,

Geo. H. Hartwell

SIGMUND BERGMANN,

MANUFACTURER OF

GAS AND ELECTRIC LIGHT FIXTURES, ETC., ETC.

OFFICE AND WORKS, 527 TO 531 WEST 34TH STREET,

New York March 2 1889

My Dear Edison

As you have doubtless learned from the papers, the German Hospital Fair has been a grand success - The show you enabled me to make has been the best and most interesting feature of the whole affair. Only your personal presence was lacking - for I told many people that you were coming. I took in an average of $85.00 for 8 evenings which was a net gain of that amount to the fund - You will receive official acknowledgement and thanks from Head quarters for your contribution to the success of the affair shortly & meanwhile I beg to express to you my sincere & hearty thank for your favors to me in enabling me to give the show Please bill me with any expenses direct or in direct which you may have incurred in the matter and I will remit the amount to you by return mail

I was very sorry to read of the ac-

SIGMUND BERGMANN,

MANUFACTURER OF

GAS AND ELECTRIC LIGHT FIXTURES, ETC., ETC.

OFFICE AND WORKS, 527 TO 531 WEST 34TH STREET,

New York 188

cident which you met with the other
day but trust that the reports in the
Morning paper that you have fully
recovered from its effects and are none
the worse for it are correct.

With sincere Regards.

Yours truly

S. Bergmann.

Thos A Edison Esq
Llewellyn Park
Orange N.J.

Exhibitors

ALL COMMUNICATIONS TO BE ADDRESSED TO THE MANAGER.

TELEGRAPHIC ADDRESS: "EXHIBIT," BIRMINGHAM.

THE ELECTRICAL AND INDUSTRIAL EXHIBITION, 1889,

BINGLEY HALL, BIRMINGHAM.

T. C. SHARP,
SECRETARY AND MANAGER.

EXECUTIVE COMMITTEE'S OFFICES,
COUNTY CHAMBERS,
CORPORATION STREET,
BIRMINGHAM.

Mar 21st 1889

Dear Sir

I am directed by the Executive Committee to thank you for your kindness in permitting your name to be added to their list of Patrons & to send you a Copy of their Prospectus & Rules.

The Committee would feel extremely obliged if you would use your influence to promote their undertaking.

After thanking you for the honour you have done the Exhibition

I am
Dear Sir
Yours Obediently
T. C. Sharp

Thomas A. Edison Esq.
New Jersey U.S.A.

[ENCLOSURE]

Exhibitions

PROSPECTUS OF THE

ELECTRICAL & INDUSTRIAL

EXHIBITION

TO BE HELD IN

BINGLEY HALL, BIRMINGHAM,

DURING THE MONTHS OF

AUGUST, SEPTEMBER, & OCTOBER, 1889.

The proceeds, after the payment of the incidental expenses connected with the Exhibition, will be devoted to the benefit of the Queen's, the General, and the Jaffray Hospitals in this City.

EXHIBITS

Will be Received at the Hall between MONDAY, JULY 15th & MONDAY, JULY 22nd only.

The Executive Committee will be pleased to supply further particulars and a Lithographed Plan, shewing the sections and available spaces, upon application being made to their Manager,

T. C. SHARP,
COUNTY CHAMBERS,
CORPORATION STREET,
BIRMINGHAM.

TRADE PRESS CO., PRINTERS, 9, CORPORATION STREET, BIRMINGHAM

[ENCLOSURE]

UNDER THE DISTINGUISHED PATRONAGE OF THE FOLLOWING NOBLEMEN AND GENTLEMEN.

THE RIGHT HON. THE MARQUIS OF SALISBURY, K.G.
HIS GRACE THE DUKE OF MARLBOROUGH.
THE RIGHT HON. THE MARQUIS OF HERTFORD.

THE RIGHT HON. JAMES WHITEHEAD, Lord Mayor of London.
THE RIGHT HON. THE EARL OF SHREWSBURY & TALBOT.
THE RIGHT HON. THE EARL OF CLARENDON.
THE RIGHT HON. THE EARL OF AYLESFORD.
THE RIGHT HON. THE EARL OF DERBY.
THE RIGHT HON. THE EARL OF COVENTRY.
THE RIGHT HON. THE EARL COMPTON.
THE RIGHT HON. LORD RANDOLPH CHURCHILL, M.P.
THE RIGHT HON. LORD HATHERTON.
THE RIGHT HON. LORD BURTON.
THE RIGHT HON. LORD WINMORE.
THE RIGHT HON. LORD LYTTELTON.
THE RIGHT HON. VISCOUNT NEWPORT.
THE RIGHT HON. ARTHUR WELLESLEY PEEL, P.C., M.A., D.L., J.P., M.P., Speaker of the House of Commons.
THE RIGHT HON. JOHN BRIGHT, P.C., M.P.
THE RIGHT HON. JOSEPH CHAMBERLAIN, P.C., M.P.
THE RIGHT HON. HENRY MATTHEWS, Q.C., M.P.
THE RIGHT HON. H. H. FOWLER, P.C., M.P.
THE RIGHT HON. PHILIP J. STANHOPE, C.B., M.P.
THE HON. WILLIAM P. LITTLETON.
SIR DAVID SALOMONS, Bart., M.A.
SIR CHARLES MORDAUNT, Bart.
SIR CHARLES FORSTER, Bart., M.P., M.A., D.L., J.P.
SIR E. LECHMERE, Bart., M.P.
SIR JOHN SWINBURNE, Bart., J.P., M.P.
SIR THOMAS S. BAZLEY, Bart.
SIR FREDERICK ABEL, C.B., D.C.L., D.Sc., F.R.S.
SIR W. C. HOWDEN, K.C.S.I., J.P., M.P.
SIR HENRY ROSCOE, M.P., F.R.S.
SIR WALTER FOSTER, M.D., M.P.
SIR JAMES SAWYER, Kt., M.D., J.P.
SIR WILLIAM THOMSON, LL.D., F.R.S.
SIR JAMES ANDERSON.
SIR JOHN PENDER.
SIR DANIEL COOPER
JOHN S. DUDDELL, Esq., Q.C., B.A., D.L., J.P., M.P.
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J. POWELL WILLIAMS, Esq., J.P., M.P.
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WILLIAM WOODALL, Esq., M.P.
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BENJAMIN HEMSLEY, Esq., M.P.
JOHN JAFFRAY, Esq., J.P., High Sheriff of Warwickshire.
PROFESSOR HUGHES, F.R.S.
PROFESSOR W. G. ADAM, D.Sc., F.R.S.
PROFESSOR SILVANUS P. THOMPSON, B.A., D.Sc., F.R.A.S.
PROFESSOR GEORGE FORBES.
PROFESSOR JOHN PERRY, D.Sc., F.R.S.
Dr. FLEMING, M.A.
THOMAS A. EDISON, Esq., New Jersey, U.S.A.
E. GRAVES, Esq., Engineer-in-Chief to General Post Office.
W. H. PREECE, Esq., Electrician to General Post Office.
R. E. CROMPTON, Esq., } Chairman London Chamber of Commerce.
H. ALABASTER, Esq., The Electrical Review.
T. E. GATEHOUSE, Esq., "
W. H. SNELL, Esq., The Electrician. "
C. H. W. BIGGS, Esq., The Electrical Engineer.
ALEXANDER SIEMENS, Esq.
GILBERT KAPP, Esq., "Industries."
COLONEL R. R. JACKSON.
H. SIMMONDS, Esq.
H. LEA, Esq.
F. J. DOWN, Esq.
Dr. WADE, J.P.
A. BAKER, Esq., J.P., F.R.C.S.
Dr. UNDERHILL.
LAWSON TAIT, Esq., F.R.C.S.
MAJOR S. FLOOD PAGE.

MR. ALDERMAN WHITE, J.P.
MR. ALDERMAN COOK, J.P.
MR. ALDERMAN W. H. HART, J.P.
MR. ALDERMAN S. EDWARDS.
MR. ALDERMAN JOSEPH AGAR, J.P., Lord Mayor of York.
C. C. JOLLIFFE, Esq., Mayor of Leeds.
WILLIAM J. CLEGG, Esq., Mayor of Sheffield.
ERNEST DAY, Esq., Mayor of Worcester.
WALTER GRAY, Esq., Mayor of Oxford.
SAMUEL RUSSELL, Esq., Mayor of Walsall.
C. NYCOCK, Esq., Mayor of Stafford.
WM. EDMUNDS, Esq., Mayor of Banbury.
WILLIAM OWEN, Esq., Mayor of Huddersfield.
MR. ALDERMAN A. S. TOMSON, J.P., Mayor of Coventry.
MR. ALDERMAN J. B. STONE, J.P., Mayor of Sutton Coldfield.
MR. ALDERMAN S. W. COOKE, Mayor of Warwick.
MR. ALDERMAN S. PLAYLE, J.P., Mayor of Leamington.
MR. ALDERMAN SHAKESHAFT, Ex-Mayor of Lichfield.
MR. ALDERMAN DALTON, J.P.
MR. ALDERMAN S. DICKINSON, J.P.
MR. COUNCILLOR STRINGER, J.P.
MR. COUNCILLOR OLIVER PEMBERTON, J.P., F.R.C.S.
MR. COUNCILLOR HARDMAN.
MR. COUNCILLOR LOWE, J.P.
MR. COUNCILLOR JACOBS.
MR. COUNCILLOR DAVIS.
MR. COUNCILLOR T. WINKLES.
MR. COUNCILLOR BARCLAY.
MR. COUNCILLOR WILDERS.
MR. COUNCILLOR J. OSBORNE.
MR. COUNCILLOR W. F. WILEY, J.P.
MR. COUNCILLOR S. CORBETT.
JAMES COVE JONES, Esq., D.L., J.P., F.S.A.
GEORGE FOX, Esq., D.L., J.P.
W. FEATHERSTONE DRAKE, Esq., J.P.
C. T. PARSONS, Esq., J.P.
HENRY HAWKES, Esq., J.P.
F. W. DARTREE, Esq., J.P.
C. PELHAM LAKE, Esq., J.P.
H. PATTON, Esq., J.P.
THOS. WHITEFOOT, Esq., Mayor of Bridgnorth.
REUBEN FARLEY, Esq., J.P.
J. COURTENAY LORD, Esq., J.P.
J. H. PEARSON, Esq., J.P.
JOHN CARTLAND, Esq., J.P.
R. P. YATES, Esq., J.P.
F. T. BOLTON, Esq., J.P.
FRANCIS J. BRAME, Esq., J.P.
T. F. TWEMLOW, Esq., J.P.
W. L. POWELL, Esq., J.P.
J. DARLINGTON, Esq., J.P.
R. WOODHOUSE, Esq., C.E., J.P.
ROWLAND J. BEECH, Esq., J.P.
J. T. CHANCE, Esq., J.P.
HENRY A. WIGGIN, Esq., J.P.
JOSEPH BARROW, Esq., J.P.
ALFRED JOHNSON, Esq., J.P.
JAMES BALDWIN, Esq., J.P.
W. SEPTIMUS HARDING, Esq., J.P.
ALFRED HILL, Esq., J.P.
COLONEL LEWIS V. LLOYD, L.D., J.P.
RICHARD PEYTON, Esq., J.P.
EDWARD NETTLEFOLD, Esq., J.P.
THOMAS HARRALD, Esq., J.P.
JOSEPH SMALLWOOD, Esq., J.P.
HOWARD RYLAND, Esq., J.P.
THOMAS H. GREEN, Esq., J.P.
JOHN BILL, Esq., J.P.
JOSEPH E. BANKS, Esq., J.P.
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W. L. BARBER, Esq.

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Dynamos—Motors—Alternating Current Transformers—Accumulators—Primary Batteries—Arc and Incandescent Lamps—Insulated Cables and Wires (submarine, subterranean, and aerial)—Switch Boards—Meters and Measuring Instruments—Automatic Apparatus—Switches—Connectors—Carbons—Electroliers—Shades and Fittings.

Plant for Dwelling Houses, Ships, Theatres, Public Buildings and central Station Installations.

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Complete Display of Electric Lighting, upon all known systems and combinations, working in Series and Parallel, direct and through transformers—all Systems for Electric Transmission of Power.

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Stamping and Piercing—Diamond Cutting, and Specialities of all kinds of Manufacturing Processes.

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Portable and Fixed Steam Engines—Gas Engines—Petroleum Engines—Agricultural Implements—Boilers and Appliances—Turbines—Hydraulic Machinery—Fire Engines and Escapes.

Driving Belts and Bands.

Sawing, Planing, Moulding, and Builders' Machinery, and all kinds of Machinery in motion or at rest.

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Oil Paintings and Water Colour Drawings—Etchings—Photography—Bronzes—Statuary—English, Dresden, Persian, Japanese, and other Pottery—Hand Painted China—Painted and Stained Glass—Organs, and Musical Instruments of all kinds.

Section No. 8.—BUILDING TRADES.

Machine-made Joinery—Conservatories—Greenhouses—Rustic Garden Arbours—Systems of Heating Rooms by Hot Air, Hot Water, and Steam—Smoke Consumers—Chandeliers—Gas Fittings—Lamps—Wall Papers—Papier Mache Goods—Sanitary Appliances—Terra-Cotta Goods—Mosaic Tiles—Ecclesiastical and General Decorations, and all kinds of New Inventions and Contrivances.

Section No. 9.—GENERAL.

Bicycles—Tricycles—Sewing Machines—Glass and China Goods—Cutlery—Stationery—Clocks, Watches, and Jewellery—Carriages, and Specialities in Vehicles of all descriptions—Models of Boats—Naval Models and Drawings—Fire-proof Safes—Fire-proof and other Paints—Specialities in Furniture, &c., &c.

Phono - Exhibit

ALL COMMUNICATIONS TO BE ADDRESSED TO THE MANAGER.

Ans. May 10/89

TELEGRAPHIC ADDRESS: "EXHIBIT," BIRMINGHAM.

THE ELECTRICAL AND INDUSTRIAL EXHIBITION, 1889,

BINGLEY HALL, BIRMINGHAM.

T. C. SHARP,
SECRETARY AND MANAGER.

EXECUTIVE COMMITTEE'S OFFICES,
COUNTY CHAMBERS,
CORPORATION STREET,
BIRMINGHAM.

April 23rd/89

Dear Sir

Referring to my letter of the 3rd April. My Committee will feel very much indebted to you if you will kindly send them the Phonograph & if at the same time you send them a Small case of Exhibits

I may say My Committee will be pleased to guarantee the Safety & the return of your Case

Yours Faithfully
T. C. Sharp

T. A. Edison Esq
Orange N. J.
New York.

Exhibition

ALL COMMUNICATIONS TO BE ADDRESSED TO THE MANAGER.

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T. C. SHARP,
SECRETARY AND MANAGER.

EXECUTIVE COMMITTEE'S OFFICES,
COUNTY CHAMBERS,
CORPORATION STREET,
BIRMINGHAM.

June 18/89.

Dear Sir

Having read a paragraph in the News Papers stating that you intend visiting the Paris Exhibition. The Executive Committee of this Exhibition wish me to say how pleased they would be if you could make it convenient to come to Birmingham on your way to or from Paris.

Trusting you may see you way clear to give us a Call

Yours Obediently.
T. C. Sharp

T. A. Edison Esq
Menlo Park. U.S.A.

Exhibition

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T. C. SHARP,
SECRETARY AND MANAGER.

EXECUTIVE COMMITTEE'S OFFICES,
COUNTY CHAMBERS,
CORPORATION STREET,
BIRMINGHAM.

June 21/89

Dear Sir

Mr Lancaster the Assistant Engineer to the above Exhibition has talking to Mr Hammer your Representative in the Paris Exhibition & he told him that in all probability you would visit Paris in August Next.

If you could make it convenient to be in Birmingham on the opening day August 1st My Committee would feel Extremely obliged

Yours faithfully
T. C. Sharp

T. A. Edison Esq
Orange
New Jersey USA

Exhibition

Jun 28/89

Ottawa, 25 June, 1889.

Sir:-

Mr Ira Cornwall, the Secretary of the Electrical Exhibition Committee of St John N.B. has applied to the Honourable G. E. Foster, Minister of Finance, to obtain permission, in order to ensure the success of the Electrical Exhibition, that you should be allowed to bring into Canada a number of electric novelties which are patented in Canada and which under the Patent law cannot be imported. The Minister of Agriculture, who is, ex-officio, commissioner of Patents, desiring to give effect if possible to this request in Mr Cornwall's letter at once caused the question

Thos A. Edison, Esq
Orange
New Jersey
U.S.

question involved to be referred to the Department of Justice for decision, such question being one of law, with an intimation that if the law would permit, it was the desire of the Minister to give effect to Mr. Connall's request.

I enclose to you herewith a copy of the report of the Deputy Minister of Justice.

I have the honour to be
Sir,
Your obedient Servant
J. Lowe.
Deputy Minister of Agriculture

[ENCLOSURE]

Exhibition

Copy.

Department of Justice,,

Ottawa, 25th June, 1889

Re application for admission of certain Patents to the St John Exhibition .

The Department of Agriculture might answer the application as follows:-

The Government will not object to the bringing of the goods in question into Canada in bond for the purpose mentioned but cannot bind third parties or guarantee the patentees against proceedings at their instance.

Signed: Robt Sedgewick

D.M.J.

Correct copy
R
D M A
June 25 '89.

Exhibition

9.30 AM
-R

EDISON LABORATORY.

TELEGRAM.

June 26th 1889

From Birmingham

To Thos. A. Edison

Confirmed
June 10/89

Will you honor us by attending opening Electrical Exhibition first August Exhibit

June 26/89

Birmingham

Do not know colors would like a yellow shade to go with a

Answer prepaid 5 words.

Not the opening but sometime in August

Edison

Exhibitions

ALL COMMUNICATIONS TO BE ADDRESSED TO THE MANAGER.

TELEGRAPHIC ADDRESS: "EXHIBIT," BIRMINGHAM.

THE ELECTRICAL AND INDUSTRIAL EXHIBITION, 1889,

BINGLEY HALL, BIRMINGHAM.

T. C. SHARP,
SECRETARY AND MANAGER.

EXECUTIVE COMMITTEE'S OFFICES,
COUNTY CHAMBERS,
CORPORATION STREET,
BIRMINGHAM.

June 27 1889.

Dear Sir

On behalf of the above Committee permit me to thank you for your kind telegram to hand this Morning.

We shall be very pleased to know as soon as convenient to yourself definitely which day you will be able to honour us with your presence at the Exhibition

T A Edison Esq.
Orange
New Jersey
U.S.A.

Yours faithfully
T. C. Sharp

Exhibit

Form No. 1.

CABLE MESSAGE.

THE WESTERN UNION TELEGRAPH COMPANY.

ALL CABLE MESSAGES received for transmission must be written on the Message Blanks provided by this Company, and are accepted hereon, under and subject to the conditions printed thereon, and on the back hereof, which conditions have been agreed to by the sender of the following message.

THOS. T. ECKERT, General Manager. NORVIN GREEN, President.

NUMBER	SENT BY	RECD BY	No. OF WORDS	CLASS
283	T Co	N	17	Ans paid

Birmingham July 3rd 1889

Received at CENTRAL CABLE OFFICE, 16 Broad St., New York.

To Ap. Edison nj

Confirmed July 10/89

Will you honour us by performing opening ceremony first August representative reception

Exhibit

(Ans paid for 10 Words only)

Exhibit

EDISON LABORATORY.

TELEGRAM.

July 3rd 1889

From Laboratory

To Exhibit

Confirmed July 10/89

Birmingham

Am sorry ~~I~~ doesn't leave in time

Edison.

Exhibit

Form No. 1.

CABLE MESSAGE.

THE WESTERN UNION TELEGRAPH COMPANY.

All CABLE MESSAGES received for transmission must be written on the Message Blanks provided by this Company for that purpose, and the printed conditions printed thereon, and on the back hereof, which conditions have been agreed to by the sender of the following message.

THOS. T. ECKERT, General Manager. NORVIN GREEN, President.

NUMBER	SENT BY	RECD BY	No. OF WORDS	CHARGES
194	L R		13	Ans'd 5 Birmingham

Received at CENTRAL CABLE OFFICE, 16 Broad St. New York,

July 4 1889

To A P 5 Edison

Ans July 6/89

Committee regret your reply cannot you possibly arrange

(note answer paid for 6 words only) Exhibit

Exhibit

EDISON LABORATORY.

TELEGRAM.

July 6 1889

From G. A. Edison

To Edison, Birmingham July 6/89

Cannot possibly

Edison

Exhibitions

ALL COMMUNICATIONS TO BE ADDRESSED TO THE MANAGER.

TELEGRAPHIC ADDRESS: "EXHIBIT," BIRMINGHAM.

THE ELECTRICAL AND INDUSTRIAL EXHIBITION, 1889,

BINGLEY HALL, BIRMINGHAM.

T. C. SHARP,
SECRETARY AND MANAGER.

EXECUTIVE COMMITTEE'S OFFICES,
COUNTY CHAMBERS,
CORPORATION STREET,
BIRMINGHAM.

July 8th 1889

Dear Sir,

The Executive Committee are very much disappointed at not being able to have the honour of your presence on the opening day, but hope to see you at the Exhibition one day in the Month of August. If it would not be trespassing too much on your Kindness they would like to Know the day you expect to arrive in Liverpool and also which day it is probable they may have the pleasure of entertaining you at the Exhibition

Trusting you will

pardon them for troubling you with these questions

Believe me

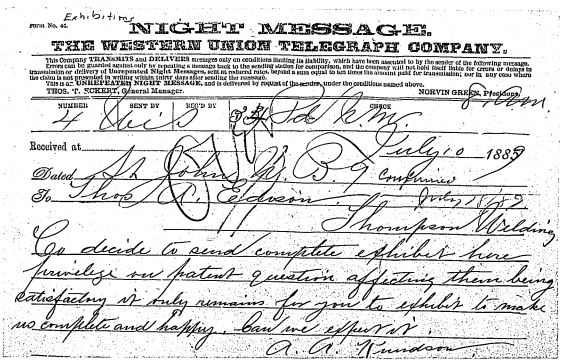
Your Obedient Servant

T. C. Strunk

J. A. Edmonston Esq

New York

Mss A



FORM No. 45. Exhibit 10

NIGHT MESSAGE.

THE WESTERN UNION TELEGRAPH COMPANY.

This Company TRANSMITS and DELIVERS messages only on conditions limiting its liability, which have been assented to by the sender of the following message. Errors can be guarded against only by repeating a message back to the sending station for comparison, and the Company will not hold itself liable for errors or delays in transmission or delivery of UNREPEATED MESSAGES, beyond the sum of fifty dollars, unless specially valued; nor beyond a sum equal to ten times the amount paid for transmission; nor in any case where the claim is not presented in writing within sixty days after sending the message.

This is a NIGHT UNREPEATED MESSAGE, and is delivered by request of the sender, under the conditions named above.

THOS. T. ECKERT, General Manager. NORVIN GREEN, President.

NUMBER	SENT BY	RECD BY	CHECK
4	Dick		

Received at

Dated July 10 1885

To Thos. A. Edison Orange N.J.

Thompson Welding

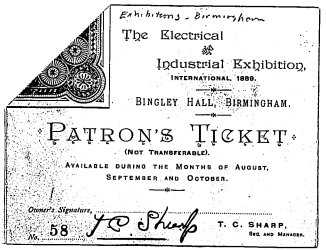
Co decide to send complete exhibit here
jewelry on patent question affecting them being
satisfactory if duly remains for you to exhibit to make
us complete and happy. Can we expect it.

A. A. Knudson

Commissioners decision
unsatisfactory throughout
Co refuse to take
the Risk

Edison

The Electrical & Industrial
Exhibition–International–1889.
BINGLEY HALL, BIRMINGHAM.
The Executive Committee request the pleasure
of Mr. Thos. A. Edison and Lady
of the Exhibition by
Lord Randolph Churchill,
on Saturday, the day of August, 1889,
at 12 o'clock noon.
R.S.V.P.


Exhibitions - Birmingham
The Electrical
&
Industrial Exhibition,
INTERNATIONAL 1889.
BINGLEY HALL, BIRMINGHAM.
PATRON'S TICKET.
(NOT TRANSFERABLE).
AVAILABLE DURING THE MONTHS OF AUGUST, SEPTEMBER AND OCTOBER.
Owner's Signature,
No. 58
T. C. SHARP,
SEC. AND MANAGER.

Exhibition - N.Y. 1892

Hotel du Rhin
Paris Aug 19/89

My dear Insull:

We received the following from Messrs Drexel Harjes & Co under date of the 16th inst:-

"Notify Edison Insull says D Moss "asking for position Electrical Commission "New York Exhibition 92 is Westinghouse "man all Edison people oppose- "Moss says you endorse it- Is this "true? Hope not Can I deny "statement on your behalf and use "your influence for P.R. Leland "Matter very important you "personally and general Edison "business"

I confirm Mr Edisons reply

"I do not endorse Moss Consider "his appointment would be most "unfortunate Use every effort to "secure appointment of someone "not identified with Commercial interests"

Yours faithfully
Upton Secretary

Sam'l Insull Esq.
Edison Machine Works
19 Dey St
New York City.

PAULY HOUSE,
JAMES PAULY, Prop.
MINNEAPOLIS, MINN.

Aug 30 1889

Mr John Ott

Dear Sir, In trying to operate the telephone yesterday, I found it was entirely out of adjustment and after some experimenting I found it was in the transmitter. I took it apart & found the carbon had been entirely broken, as I am about to leave for St Louis tomorrow. Mr Bronson said he would return it & have another one put in. I have made him familiar with it and I think he is capable of taking care of it.

PAULY HOUSE,
JAMES PAULY, Prop.
MINNEAPOLIS, MINN.

18

Will you please send me fifteen or twenty dollars on a/c of salary. The Phonograph is still the main feature of the whole exposition.

I remain Yours very Respectfully

Hagen

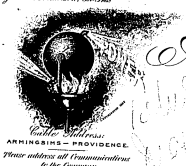
St Louis
Mo

A+S

James C. Brayton, Pres't
John W. Brandon, Vice-Pres't

Barlow, Armington, Treas.
H.C. Brandon, Asst Treas.

Gardiner C. Sims, Gen. Manager
Theodore Andrews, Secy.



Armington and Sims

ENGINE COMPANY.

Cable Address:
ARMINGSIMS — PROVIDENCE.
Please address all Communications to the Company.

Providence, Sept. 12th. 1889.

RECEIVED
SEP 17 1889

Thomas A. Edison, Esq.,

Orange, N.J.,

Dear Sir:-

Without doubt there will be an Expesition held in New York in 1892 and if so, this Company will desire to make as large an exhibit as possible. We should, of course, make an exhibit of our different types of Engines, Standard, Compound, Triple Expansion, Double, Direct Connected and Vertical, but we feel that we should do more than this: that having been the pioneers in the High Speed Engine business as connected with electric lighting and having now the leading manufactory in the world devoted to this class of work, we should show as many Engines at work as possible.

Your Company will no doubt make a Special display and to "take time by the forelock" our present object in writing is to inform you that this Company will

furnish you with all of the Engines that you may require, during the exhibition without charge. If you anticipate shewing any decided advance in electrical engineering, requiring a Special type of Engine, we shall be pleased to co-operate with you- we have in mind that possibly you might desire to build some Special generator of unusual size requiring a quick running direct connected Engine- if so, by giving us ample time, we shall be pleased to meet your wants.

We write thus early that there may be ample time to 'work up matters' and shall be pleased to hear from you.

I am

Yours truly,

Treasurer.

THE COMMITTEE FOR THE INTERNATIONAL EXPOSITION OF 1892.

MAYOR'S OFFICE,

CITY HALL,

Hon. HUGH J. GRANT, Chairman.
W. Mah. SPEER, Secretary.

NEW YORK, October 4, 1889.

Dear Sir:-

No.

By direction of the Mayor I have the honor to request your presence at a meeting of the Committee for the International Exposition of 1892 at the Governor's Room in the City Hall on the afternoon of Thursday, October the Tenth, at three o'clock.

Respectfully,

W. Mah. Speer.
Secretary.

Thomas A. Edison, Esq're.

World's Fair - N.Y. - 1892

EUGENE BLOODGOOD BEEBE,
Financial Editor SUNDAY MERCURY,
and Assistant Editor of
THE FINANCIAL & MINING RECORD
Address:
HOTEL ROYAL, NEW YORK.

Information furnished of deals of the powers behind the throne.

New York October 8/89

Thomas E Edison Esq.
Ft, Ft, Ft.

My dear Sir

I beg leave to congratulate you on the appreciation you have received abroad, and also to endose my financial article, from the S.M., in which I have taken the liberty of making a brief reference to your personnel.

Allow me to add that I have read the interviews such you recently published with much pleasure and instruction.

I cannot but think that you may do much to push the project of the World's Fair ahead and bring order out of chaos.

The people and the press of the country, are influenced by commanding minds and they seem to divide you on the B. Franklin of the 19th century. Napoleon said that imagination ruled the world but with you, Electricity is the lever of Archimedes and the sun a dynamo. As you have been abroad, it may not have occurred to you that the opposition to using any portion of the Central Park, seems to have been attacked by a lot of real estate speculators and who would sacrifice the Park and the city to carry their point. They howl against the use of a small portion of the Park as if it were a modern Sacrece, the victim of a ruthless Targuin.

You say that the world will be a "big oar" in the not distant future; but it seems to me that several of the Site Committee have Midas-like ears which would, like Puck's girdle, encircle the globe.

I do not see how sufficient ground can be obtained without enormous expense and interminable trouble and great delays, unless some portion of the Park is used.

To overcome the popular objection to the use of a small part of this resort, I trust that you will agree with me and formulate some plans, submitting them at your earliest convenience.

Allow me to suggest:

I That electric fountains be built at the North-west corner of the Park, of a permanent kind and like those of Versailles, so grand as to obtain a world renowned fame.

II That the buildings erected in the Park for the Fair, shall be of such permanent construction and character, that they can be used afterwards for a Jardin des Plantes, for a "Zoo" and for more gardens, in the stormy season of the year.

4

III. That the other alterations of the Fair shall be so novel, that travellers will come from all parts of the world to see them. Victor Hugo in his account of the funeral of Napoleon le Grand, pictures the colossal statues erected on that occasion on the Boulevards: these statues were of plaster and of a temporary kind. Such grand façades could be erected near the Fair buildings of Ferdinand and his consort, Columbus, Galileo, Sir Isaac Newton, Franklin Morse, Peter Cooper and the inexpressible Edison

IV. The buildings should be of the style of architecture to represent some grand building in each Country, of exhibiting at the Exposition. Trusting you will express some of these ideas

I have the honor to be
dear Mr. Edison
Your obed. Servant.
Eugène Bloxham Burke

[ENCLOSURE]

WALL STREET TALK.

Prices Likely to Go Higher—Western Union Being Absorbed—The Bears Becoming Desperate—Attacks on Atchison and Sugar Certificates—New Haven's Big Watermelon—The Aristocrats of the Stock Exchange—Iron and the Dogberrys of the Street.

The conditions still give the bulls the convenience of their own ideas and they continue to pick up stocks, much to the consternation of the brutus. The advance in the Bank of England rate was unexpected, as much gold goes to the Argentine Republic, where a lot of speculating banks are indulging in a rag-money craze. Paris, too, is drawing money from London, and the bitter must protect itself from a drain in that direction and prospective gold shipments to this city. Wheat nuisance and the sterling exchange rate drops. The Chicago market being oversold and the new wheat coming badly, the foreign exchange market appears likely to go higher. The Vanderbilt stocks are

YOUNG OF THE MARKET.

The powers behind the throne are taking advantage of the bear talk to accumulate stocks. Some of the new markets will soon see Lake Shores at one hundred and ten and the Three C's at eighty-five. The latter stock is selling at a low figure because of the rumor that the common stock has raised over twenty cent. applicable to dividends. Western Union pulls in the ears and is being treated by the Vanderbilt interest in the manner that Lake Shore was treated before it got started. Now watch all the west shs failed within and refused to advance more, so that

THE BEARS HAVE BECOME DESPERATE

and have attacked Atchison in order to get back their shorts in St. Paul, Burlington and Quincy. Atchison is the best railroad property in the country. Its Coal and Iron, which has taken a rise of over eleven points, as predicted exclusively in the MERCURY several months since. The Boston woolen industry, grazer and cattle interests promise Atchison unusual prosperity for the next year. They will have advanced Atchison and sugar certificates on the most favorable manner. Current was also on the right side of the market. Its new issue of bonds has met with brilliant success. "Kerry" has appointed on the seats in Broad street, pale, cadaverous and emaciated. He is a man of great ability and has the mental heart of a man that has the supreme faith in its power to shake on the wearing cant—sean "Kerry." It is all well enough to go short of the wise

SUGAR OLD CHICHUNUT, ATCHISON,

which ought to have been in the hands of the speculator receiver long ago, but when it comes to shorting the sugar trust, the bears are not in it. Every dividends right along, the cash is deferred. There are fifty millions of these sugar certificates and profits. The bears have sold short over twenty-five seventy millions during the past few days, so that Searcy and his crowd are supposed to be short seventy millions. When they come to cover there

have been brought to justice are this. The financier who emancipates to every millionaire doubles the money can afford to return a portion of it and the money can afford to return a portion of it and the money can afford to return a portion of it and

Weekly Sun - N.Y. 1892

Answ. Oct 10/89

Office of Frank & Du Bois,

Fire, Marine & Railroad Insurance

58 WILLIAM STREET.

EMIL H. FRANK.
CORNELIUS DU BOIS.
CORNELIUS D. DU BOIS.

New York, Oct. 8th 1889

Prof. Thomas Alva Edison,

Dear Sir:

Some six months since I had the pleasure of calling upon you at your Laboratory with my friend Mr A Forbes Higgins of 50 Wall Street, re. the Jamieson Chemical Battery.

I would visit you now, but am like yourself a very busy man, and the subject matter which I intend by this same mail explains itself.

What I desire to know is whether you will associate yourself with me in aiding the World's Fair, by being responsible for the proper lighting and light effects desired to represent the moon and starry firmament.

Many novelties will doubtless suggest themselves to you in this connection.

I am confident that no man living is better able to perform the part I have laid out for myself, viz: The Construction of the Building and Roof and The Building of the Model &c.

My experience on top of Mountain Peaks, and a bird's eye

Office of Frank & Du Bois,
Fire, Marine & Railroad Insurance.
58 WILLIAM STREET.

EMIL H. FRANK.
CORNELIUS DU BOIS.
CORNELIUS D. DU BOIS.

New York Oct 8th 1887

View of my New York Harbor Model filled with water, assures me that the pictorial effect, especially at night time with side lights turned on, will be magnificent, magnificent beyond all general belief, to say nothing of the historical tableaux that can be produced and the innumerable profitable uses to which such a Building can be put.

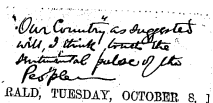
I am equally sure that you can devise some lighting system and produce light effects that would startle the world into their beauty. It strikes me that I perceive in the comparatively small height of ceiling for the ground space covered – This, however, can be 80 or 100 feet high if it is decided that the results will justify the extra cost.

I hope you will not think my proposition impertinent or too small for your world wide reputation, and that you will agree with me in thinking that the occasion is worthy your Master Mind.

Yours very truly
Francis S. Palmer

P.S. For the present please treat this communication and the Papers as confidential

[ENCLOSURE]



"Our Country" as suggested will, I think, crown the International palace of the People

RALD, TUESDAY, OCTOBER 8, 1

ernor the State will have an honest and able administration.

It is just as well to tell the truth about these matters. Such a course may not suit blind partisans and professional politicians, but it conserves the interests of the people.

The Exposition—East and West.

Everything in this part of the country is harmoniously working toward the success of the international exposition in 1892. The Committee on Legislation will ask Congress to incorporate the undertaking in order that it may be truly national, and the Committee on Finance has agreed upon a plan for raising funds. The entire enterprise, so far as it has been developed, will be considered by the General Committee, which is to meet on Thursday next.

In a few days the valves are to be opened and every pound of steam in the metropolis will be applied. The enormous wealth and energy of the Eastern and Southern States all united with New York ought to place the exposition on a sure foundation within a month or two.

Meanwhile the lusty and enthusiastic folks of Chicago and St. Louis are stirring about. A convention of delegates pledged to secure the exposition for the West has met in St. Joseph, Mo., and adopted a long and ridiculously inaccurate document containing among other things the following:—

Whereas there are cities in the West possessing transportation and other facilities for making a success of the exposition [illegible] by any Eastern city; and

Whereas the greatest exhibit that can be made by visitors from other nations is the contrast between which cannot be seen by visiting one city or either [illegible] of the continent; therefore,

Resolved, That the exposition of 1892 should be held in some city of the West which is willing to provide the requisite means.

Resolved, That we will unite our efforts to obtain from Congress the location of the fair at some point west of the Alleghanies that will be most easily and most commendable and convenient of access to the largest number of our people and for visitors of the Old World.

Then Governor Francis moved that this

Form No. 1.

THE WESTERN UNION TELEGRAPH COMPANY.

This Company TRANSMITS and DELIVERS messages only on conditions limiting its liability, which have been assented to by the sender of the following message. Errors can be guarded against only by repeating a message back to the sending station for comparison, and the company will not hold itself liable for errors or delays in transmission or delivery of Unrepeated Messages, beyond the amount of tolls paid thereon, nor in any case where the claim is not presented in writing within sixty days after sending the message.

This is an UNREPEATED MESSAGE, and is delivered by request of the sender, under the conditions named above.

THOS. T. ECKERT, General Manager. NORVIN GREEN, President.

NUMBER	SENT BY	RECEIVED	CHECK
74	Tw	9m	25 Paid

Received at ORANGE, N. J. 430 Oct 11 1889

Dated St Louis Mo 11

To Thos. A. Edison

Orange N J

In Compliance with request of our Mr and manager of Exposition we desire to thanks you & by you may quick as possible answer our Expense

Mo Phono Co

Phono

EDISON LABORATORY.

TELEGRAM.

Oct 12 1889

From

M. C. Missouri Phonograph Company

St Louis Mo.

Will despatch Phonograms with pleasure

Edison

Sent 9.10 AM.

Oct. 12 1889

Phono

Form No. 1.

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This is an UNREPEATED MESSAGE, and is delivered by request of the sender, under the conditions named above.

THOS. T. ECKERT, General Manager. NORVIN GREEN, President.

NUMBER	SENT BY	RECEIVED	CHECK
25	Mr	12m	12 paid

Received at ORANGE, N. J. 12 45 Oct 12 1889

Dated St Louis Mo 16

To Edison Orange N J

Have 4 phonograms been shipped yet only four I dozen more of

Supplies

J. W. Moore Secy

THE COMMITTEE FOR THE INTERNATIONAL EXPOSITION OF 1892.

MAYOR'S OFFICE,
CITY HALL,
NEW YORK, October 19, 1889.

Hon. HUGH J. GRANT, Chairman.
W. McM. SPEER, Secretary.

#5367 63 44

Rec'd Oct. 24/89

Dear Sir:--

I have the honor to enclose to you a copy of a resolution passed by the Committee for the International Exposition of 1892 at its meeting at the Common Council Chamber in the City Hall on October the Tenth, and a copy of a resolution passed by the Committee on Finance at its meeting at the Chamber of Commerce on October the Sixteenth.

Under these resolutions One Hundred Thousand Dollars is to be raised by the members of the General Committee. There are one hundred and eighty-six members of this Committee, exclusive of the members of the sub-committees. Will you kindly send to me your check toward this fund.

Respectfully,

Wm. Mcm. Speer.
Secretary.

Thomas A. Edison, Esq're.

5367.63

186 100000 9300 5000 1500 1116 640 558

[ENCLOSURE]

THE COMMITTEE FOR THE INTERNATIONAL EXPOSITION OF 1892.

MAYOR'S OFFICE,

CITY HALL,

Hon. HUGH J. GRANT, Chairman.
W. Mon. BEER, Secretary.

NEW YORK, October 18th, 1889.

Extracts from the minutes of the meeting of the Committee for the International Exposition of 1892 at the Common Council Chamber, City Hall, three o'clock, October 10th.

On motion by Mr. Flower, seconded by Mr. Shepard, the following resolution was adopted:

Whereas, The present plan of the Finance Committee provides for the raising of Funds only in case Congress decides to locate the Exposition in New York, and

Whereas, Clerk hire, maps, stationery, and other incidental expenses will have to be provided for before that time,

Resolved, That the Executive Committee of the Finance Committee be, and is hereby empowered, to formulate a plan asking for subscriptions in money to the amount of $200,000 for the uses of the various Committees.

Extract from the minutes of the meeting of the Committee on Finance, at the Chamber of Commerce, on the 16th of October:

That the Committee on Finance contribute the sum of $25,000, and that the Chairman be authorized to confer with the Mayor and the Chairmen of the Committees on Legislation, Site and Buildings, and Permanent Organization, and state to them that it is the opinion of the Committee on Finance, that each of the four Committees should contribute $25,000 towards the preliminary expenses, and that the Committee on Finance would subscribe that amount, and that the balance should be contributed by the General Committee.

[No. 1.]

INTERNATIONAL EXPOSITION OF 1892.

COMMITTEE ON FINANCE.

No. 36 Nassau Street,

New-York, October 21st 1889.

Mr. Thomas A. Edison,

Member of the General Committee for the International Exposition of 1892.

Dear Sir:

I have been instructed by the Committee on Finance to transmit to you the enclosed Subscription Book, and ask you to circulate the same among the trade or profession you represent, and solicit subscriptions to the $5,000,000 Guarantee Fund.

The Committee also request that you send to the undersigned, at the Rooms of the Chamber of Commerce, No. 36 Nassau Street, for publication, a daily report of the subscriptions received.

Very respectfully,

Geo. Wilson

Secretary.

THE COMMITTEE FOR THE INTERNATIONAL EXPOSITION OF 1892.

MAYOR'S OFFICE,

CITY HALL,

Hon. HUGH J. GRANT, Chairman.
W. MoM. SPEER, Secretary.

NEW YORK, October 26, 1889.

Dear Sir:--

I have the honor to acknowledge the receipt of your check for $537.64 towards the preliminary expense fund for the International Exposition of 1892.

Respectfully,

Wm. M. Speer.

Secretary.

Thomas A. Edison, Esq're.

Ref to Exhibits

THE PHONOGRAPH-GRAPHOPHONE. THE PHONOGRAPH.

THE MISSOURI PHONOGRAPH COMPANY,

621 AND 622 KEITH & PERRY BUILDING,
UNDER THE AUTHORITY OF
THE NORTH AMERICAN PHONOGRAPH CO.
AND BY THE SOLE LICENSEE OF
THE AMERICAN GRAPHOPHONE CO.
CAPITAL $625,000.

DICTATED TO PHONOGRAPH.

KANSAS CITY, MO. Oct. 30th. 1889.

To our Associate Friends:-

Much discussion has been had by the different Companies in regard to the subject of Exhibits. Maj. A.W. Clancy went to St. Louis two or three days before their great Exposition of 1889 which lasted forty days, and arranged with the management to make a display and give an explanation of the use of the Phonograph and Graphophone. He was assisted by Mr. J.W. Moore, the Secretary of the Company and a number of other experienced persons. The result of this exhibit to the Company is highly satisfactory, as we think it has not only advertised the machine successfully in our own teritory (Missouri, Arkansas and Indian Territory) but it certainly has had a very great influence in the neighboring States and Territories. We had calls from Illinois, Indiana, Tennessee, Texas, Nebraska, Kansas, Colorado and Iowa in great numbers, and many of the gentlemen from these outside States were inquiring for the names of the Companies controlling their territory, whom they should address in order to be supplied with Phonographs. The following is the general work and result of the exhibit.

500000 visited the Exposition.
250000 of these at least, saw and listened to Phonographs.
10 Graphophones were on exhibition.
16 Phonographs were on exhibition.
24 people constatly employed as assistants.
75000 people received definite and thorough instruction.
$400 paid to newspapers.
$2500 in general advertising.
80000 dodgers were used.
20000 prospectus, giving general history of the Phonograph and Graphophone.
20000 circulars of general information.
1000 special attention cards.
1000 complimentary tickets.
1000 special invitations.
3000 extra circulars.

The Phonographs were exhibited; (1) By reproducing loud band music without the use of ear tubes, accompanied by a brief history of the machines; (2) Persons were brought near the machines and full explanations as to how to record and reproduce the human voice, were given with illustrations; (3) The business use of the machines were given by competent clerks copying letters with the type

THE PHONOGRAPH-GRAPHOPHONE.

THE PHONOGRAPH.

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THE AMERICAN GRAPHOPHONE CO.
CAPITAL $625,000.

DICTATED TO PHONOGRAPH.

KANSAS CITY, MO.

writers and with the pen.

Mr. Edison's talk was highly appreciated and the attendance was greatly increased when it became known that we had received the Phonograms from him.

We hail with joy reports that are coming out with reference to the improved Phonographs and trust that the Companies will join in advertising, and assist one another in making the machines a success among the people generally.

Yours very truly,

Missouri Phonograph Co.,

St. Louis, Nov. 17th. 1889

To

Prof. Thomas A. Edison

Menloe Park.

Dear Sir:-

In view of the Electrical Exhibition to be given by the St. Louis Universal Exposition Association next year, I have been importuned to wait upon you at your home in the East for the purpose of ascertaining the possibility of inducing you to honor St. Louis with your presence, and the display of some of the interesting and useful inventions of your wonderful genius.

I beg further to say, that the Administration sincerely regret the groundless attack made upon you by Mr. Whipple, their last Chief Electrician, and hope that such will not reflect upon them, nor in any way deter you from helping them through the coming event.

The public have read of your greatness, and clamour for a sight of those wonderful inventions that have so astonished the world.

Paris can see you, but St. Louis is deprived of that pleasure. The Directors of the coming exposition have promised

St. Louis, 188

2.

to do their utmost to induce you to visit St. Louis next year.

I would feel grateful if you would appoint a time and place most convenient to you, where I can confer with you upon this subject.

I hardly believe you will remember the undersigned. I worked on the same circuit with you in our telegraph-operating days. I have enclosed two articles cut from our Daily Papers. If you feel inclined to answer them I would be pleased to see that your reply finds the way to public observance. (~~I wish you would, and give Whipple fits~~).

Most Respectfully Yours,

W. A. V. Sham
2014 Walnut St

[ENCLOSURE]

St. Louis Daily Globe-D

AN ELECTRICIAN'S ESCAPADE

One Which Has Given West End Society Quite a Shock.

The Positive and Negative Sides of Mr. Fred H. Whipple's Love-Making—Deadly Work of the High-Tension Alternating Current.

There will be a sort of electric thrill in West End society this morning when it is learned that Isaac Hoist has been harboring a siren of several years' experience as the supposed wife of a man who has figured largely as the head and front of an exhibition which has done no little towards making St. Louis' name and fame recognized abroad.

In an electric light plant there is always a central station, or installation, in which are operated the dynamos which furnish the currents that hundreds of yards away make dull carbons yield the brilliancy of the arc light. An electric social sensation necessarily follows the same order of arrangement. The central station in this case was the man in charge of the electric exhibit in the Southern, at the World's Exposition, Mr. Frederick H. Whipple, and it was the intense current of his infatuation for a Twelfth street siren that caused her to find her place as a society belle in a West End home, and also to have involved patriotic Isaac Hoist in the most exclusive and fastidious.

THE SIREN.

Who was she? She came was Irene Van Cleave. She was a handsome girl, with dark, large, frank eyes. She came from a small town near Indianapolis, but had lived with an aunt in Paris, Ill., till about two years ago, when she located at Miss Jobe Hunt-ington's, on Twelfth street. Irene's own father, a well-to-do business man, came after her, and Miss Huntley reasoned and worked with the girl to induce her to return home, but to no avail. The girl was bent on a career, regardless of sin, and in the school names she styles herself

She had fine manners and some winning ways. Her "victims" were many, and the latest was Mr. Fred H. Whipple. They were both employed at the Southern. Irene and Mr. Whipple is nothing if not handsome. In a few days after their first meeting Irene was considerately richer, and then Mr. Whipple proposed to her to go housekeeping. This Irene thought a splendid idea, and the couple when hooking with Edgo with which to buy a sealskin sacque, and the pair started in at the St. James as "Mr. and Mrs. Hunter." When Mr. Whipple was laid up with a broken collar bone, Irene was also laid up in a tuberculosis thumbnail at the Exposition—he was at the Southern, where he was nursed by a colored lady, who is a confidential and trusted attendee of Miss Huntley's family. Irene was not only a loving lover, but the rules of society did not permit

LOVE AND FINANCES.

About this time Irene was pledging her love to hold out an hour at Fred's money bags, and Fred, who was ignorant of the particular knack, taste or extravagance might require. She thought she had a "couch" on a good thing, but was too old a bird to be caught with chaff. When Mr. Whipple left the Southern he had a good deal of money for his services as manager of the electrical exhibit, and easily went down to the exhibit—most of the electric exhibitors know her by this time as "Irene"—and began to look around for some financial prospects. Her next ambition was to go to the Veiled Prophet's ball, but her mother didn't dare send this, and Irene was a "family jar" for the time being. Indeed, Irene's mother was not at her lover was a married man, and he was strange to explain that his wife was not only dumb, but "cross as ten."

Mr. Whipple's love current, however, was of the alternating kind, and moreover was somewhat of the variable current pattern. Having cut Mrs. Whipple and her little lawful wife, entirely out of circuit, he proposed to Irene that they go to Sidney City, Ill., where Irene's mother lives, and have a long-postponed wedding. Irene said she could not go to the Veiled Prophet's ball, but her mother was willing to go to Sidney City. Mr. Whipple was willing to go to Sidney City. Mr. Whipple was willing to go to Sidney City. Mr. Whipple

after 8PM, and after 11PM they were not even home, but in a saloon, or some other resort of the kind, but to no avail. The girl was held on earning the wages of sin, and in the gilded palace she stayed.

She had like sentiments and sense vibrating in her soul when Mrs. Whipple's letter came. The letter was Mr. Fred C. Whipple. They were well practiced in points of hooks, for Mr. Whipple is nothing if not numerous. In a few days after their first meeting Irene was encountered by Mr. Whipple, and by a very long and tedious process of manoeuvering, which would be an interesting suggestion, especially when incased with $500 with which to buy a sunstarch ancone, and the pair started in at the old, game of "Mr. and Mrs. Barbour." When Mr. Whipple was not in the position of the Barbours he was with Cuba up a tobacco illumination at the Exposition—he was at the Southern, where he was nursed by a colored lady, who is a confidential and trusted attendee of Miss Stanley's and knows all the secrets of the bower, but the ruins of society did not permit.

LOVE AND FINANCES.

About this time Irene was pledging her love to hold out as long as Your Besmog Correspondent, but her finances, to gratify her fancy, taste of extravagance might require. She thought she had a "check" on a good thing, but was too out and a hint to be caught with chaff. When Mr. Whipple left for the East he had a large sum of money for his services as manager of the electrical exhibit, and could went down to the exhibit—much of the electric exhibitors know her by this time as "Pleasant Irene"—and looked over the financial prospects. Her most ambition was to go to the Veiled Prophet's ball, but her mother didn't care many this, and there was a "family jar" for the time being, but Irene's diplomacy won the day, and she went in a married man, and he was prompt to explain that his wife was not only cranky, but "cruel as ice."

Mr. Whipple's love opened, however, was after the manner order, and moreover was somewhat of the "alternating" pattern, leaving out Mrs. Whipple in Detroit, his home, and Irene in St. Louis, and he was prone to frame their they go to Kansas City. They went. From Kansas City Mr. Whipple telegraphed a friend to secure him rooms at the Hotel Imani. The friend declined to do so, but Mr. Whipple secured them independent that on their return from the city to the Rawr Mr. Whipple and Irene rustled in the lobby of the Imani, and the friend was "floored." He had a few unfortunate contacts but on none was the proprietors were below their usual high spirits.

"It was a reporter who asked the proprietor of the hotel.

"Say—Mr. and Mrs. Whipple stopping here?"

"Yes, sir; but they have gone out to a reception or party this evening."

"Well, I'd like to describe this picture!" the reporter said, displaying a photograph of Irene which he had secured in his rambinces.

"Lod, sir—"

The reporter made a remark, and the proprietor replied. "It don't be beautiful," the proprietor exclaimed, and continued:

"Don't trouble a word about it, and I'll look into the matter to-morrow. I'm much obliged for the information."

That then Irene and Fred made their appearance at the hotel the proprietor knew a woman from the pictures at a glance. She wrapped past a little group of society people among the most important ones of a society young in the honor born. There's something of a mystery about the names of the other fellow-guests on Grand Avenue to-day.

A SOCIAL MARVEL.

The man who has made this social error—Mr. Fred H. Whipple—is a well-known electrician. He was a delegate to the Chicago, and was a leading figure at the Niagara Falls Electrical Convention, and tried and worked hard to get the next session of that association held in St. Louis. He is the author of a book entitled "Electricity in Man and Another as "Electric Shocks," and is also a general writer on electrical topics. He is quite a young man, with auburn hair and mustache, dresses nicely, and has a pleasant address, which has won for him many friends. He was the originator of the idea of having an electric exhibit at the St. Louis Exposition, and he made it an unqualified success.

In the many general arrangements for entertainment and surprises at the Exposition that were knocked into a cocked hat by the susceptibility of the gay electrician to the wiles and smiles of the pretty sobbel dove, Irene Stanley, the many were the direct electricians had made the desired preparations to attend the Olympic Theater on Society night during the Corsair Company's week. Of course, Mr. Whipple was to be the guest of honor and leading member of the party, and boxes were secured to accommodate. It soon was suggested by somebody—whether by Whipple is not known—that the gentlemen ought to show the ladies a little thanksgiving tastes to go to the theater. Somebody suggested very well on its face, said under the circumstances would have been quite the proper thing to do, but in the light of the Irene-Whipple-leading love to the theater party it was said one of the supposes of the Exposition also overheard the electricians discussing the question, "they said that they well know that Mr. Whipple would pay them for them, for Whipple would get a heart full of money in return in a box before the audience, and it was too much for their modesty and stomachs." The theater party wasn't a "go."

But, again, it was suggested in the air of the Exposition that a benefit amongst which would be given by the electrical exhibitors and given, too, in honor of Supt. Whipple, whom wine would flow to shine away hilarious hours around the festive board, and the proceeds of the show would make a fine session one long to be remembered. But some wits and wine must always be associated the women, notwithstanding the dire calamity that nearly relieve the three Graces of their heads up the thought of the presence of that steed. The benefit was the longest never came. At present a paper is being circulated among the electrical exhibitors in the basement for subscriptions to raise money for a testimonial to be presented to Supt. Whipple. It is expected to be. Whipple in honor of his unquestioned abilities as an electrician. Several dollars have already been subscribed, and as there is some opposition on the part of a few to the benefit idea it will be raised in the instance, it is probable that the testimonial will be presented as a reward of merit.

MRS. WHIPPLE.

The lawful Mrs. Whipple, who lives in Detroit, is described as about 5 feet 7 inches high, has dark hair and eyes, an oval face, with somewhat prominent cheek bones. She is graceful in movement, speaks with a pleasant voice, and is considered a handsome, stylish woman. She evades expensively but not gaudily, wears diamonds, and usually has about diamonds on her headwear. She is probably 30 years old, but looks younger. She is a society woman, and is moderately well read; is a ready conversationalist, and latterly has devoted much of her conversation to electrical matters, especially since her husband became one of the leading electricians of the country. She will receive probably 40 pounds. When Mr. Whipple was cowsilled at Toledo, O., by the mother of a young woman with whom he was associating too much, Mrs. Whipple manifested no forgiveness, although its published letters showed that he was tired of her.

Will she forgive him now? And will Mr. Whipple manage the electrical exposition at St. Louis next year? What will President Roosevelt say when he reads this?

[ENCLOSURE]

P. Rbts - Womens Exchange - 1890

9 - 7 - P. 1889-11-26

EDISON GENERAL ELECTRIC CO.
44 WALL STREET.

New York, Nov. 26, 1889. *18*

Thomas A. Edison, Esq.,
Orange, N. J.

Ans. Dec. 9/89

Dear Sir :

I reported to the meeting of the Ladies Committee of the Woman's Exchange yesterday, announcing your kind intention to arrange for exhibition, the date of the opening to be Easter Monday, April 6th, possession of building to be had two weeks previous.

The Steam Heating Company have their building adjoining, and we can hire from 300 to 600 power from their boilers. There is also a vacant lot, on which it is contemplated to erect an electric light plant, and it is expected to have one furnished by our company. I am negotiating for the same with Mr. Prentice, President of the Steam Heating Co.

Mr. Villard suggests that communications be entered into at once with Europe for such duplicates as can be procured of the Berlin and Paris expositions; also for cylinders of Bismark, Emperor William, Von Moltke, the Austrian Emperor, etc, etc.

Can you make an appointment to inspect the premises with me as soon after your return as possible ? Awaiting further particulars, I remain

Yours, etc.,

Please forward to Mr. Edison if not in Orange.

General Commissioner.

SAMUEL INSULL.

44 WALL STREET,

New York, November 20th, 1889.

A.O.Tate Esq.,

Edison's Laboratory, Orange,

New Jersey.

Dear Sir:-

I have your favor of the 27th, and return you herewith Mr.Dyer's letter.

I think it would be a big mistake for Mr.Edison to make any exhibit whatever at Edinburgh. He has made a tremendous show at Paris, at a very great expense, and all the credit that can be attached to such a thing, he has gotten. He could not obtain any further recognition by any exhibit at Edinburgh, neither would it be of any business assistance to us. Furthermore, inasmuch as the exhibit there would be nothing as compared with the Paris exhibit, comparisons would be made to the actual injury of Mr.Edison and his business.

I would very much like you to show him this letter when he reads Mr.Dyer's.

Yours truly,

Samuel Insull

Enc.

[ENCLOSURE]

Exhibitions - Edinburgh - 1890

PHILIP S. DYER

EUROPEAN AGENT

AMERICAN

EDISON FACTORIES

Adresse Télégraphique :
DYER (Anvers).

EDISON LAMP COMPANY
EAST NEWARK, N. J.
Capital $ 250,000.

Edison Lamps, 1/2, 1/2, 1, 2, 3, 4, 5, 6, 8, 10, 13, 16, 20, 24, 32, 50, 100, 150 Candle Power
Voltmeters, Portable Voltmeters
Pressure Indicators
Small Battery Edison Lamps, Surgical and Dental Lamps.

THE EDISON MACHINE WORKS
Capital $ 750,000

Electric Light and Telegraph Dynamos, Electric Motors,
Slanting Pulleys etc.
Edison's Underground Cable for Electric Lighting, Telegraph and Telephone,
Edison's Devices for Underground Distribution,
Fusible Metal Strips marked to Ampere Capacity.

BERGMANN AND COMPANY,
Capital $ 750,000

Electrical Instruments
Edison Phonographs,
American Switches, Cut Outs, Sockets,
Glass Fusible Safety Plugs,
Edison's Meters
All Devices for Theatre regulation.

STANDARD THERMOMETER C°
Capital $ 75,000

Metallic Thermometers.

THE TELEMETER COMPANY
OF NEW-YORK
Capital $ 500,000

Electric
Recording Steam Gauges,
Recording Water & Tide Gauge,
Recording Gasometer Gauge,
Elevator Indicator wind Gauge,
Recording Thermometers,
Recording Barometer,
Time System.

Rue Osy, 43[a]

ANTWERP, Nov 16th 1889

Thomas A Edison Esq
Orange N. J.

Dear Sir, Answ. Dec. 10/89

The Edinburgh Exhibition people feel my badly, that they will not have you represented in some way in the Exhibition. I think you can make any kind of terms you like with Mr J. Lee Bayley the Manager. Why not send over one of your "Multi-polar" Central Station Dynamos, and light up a part of the Exhibition. With this Machine you could send over a few things such as Meters, Underground System Wire Regulators &c. and make a creditable display, and at a very cheap cost as the

[ENCLOSURE]

Edinburgh people are anxious to have you in. You know you are one of the Nor Prov.

In a letter from Mr Barnes who also seems anxious to have you make a show, he says the Edinburgh people will find space, and will bear all expenses.

You can make a mighty fine Exhibit without going to any trouble. One man could take down the things, place the Machine, run it, and look out for every thing. You have done a big thing for France, Now is the chance to get your new Dynamo well on the English market. I think orders enough could be taken at the Exposition for the Multi-polar Machines to give them a splendid run on this side. The Edinburgh Expo will be largely attended by Russians, and Russia is one of the large markets of the future.

Yours Very Truly
Chas. A. Dyer

DEAR SIR: The substance of the following letter has been discussed with other members of the several committees on the World's Fair in New York, with many representative engineers and architects, and with numerous intelligent visitors to Paris during the past Summer. Every one thus consulted, *without exception*, has expressed concurrence in the views presented by the letter, the only doubt being as to the expediency of discussing the matter at the present time.

The primary questions relating to the great project must be determined by Congress, and are now about to come before it for discussion. Time is one of these, and the arguments concerning it apply irrespective of locality. If these views commend themselves to your judgment it is hoped that you will give such expression to them as will tend to promote the object which is sought.

Respectfully,

HENRY R. TOWNE.

Hon. Hugh J. Grant: Chairman of Committee on International Exhibition, New York.

DEAR SIR:—In an address delivered November 19th before the AMERICAN SOCIETY OF MECHANICAL ENGINEERS, I suggested the expediency of securing more time for the work of preparation for the proposed International Exhibition. So much publicity has been given to that suggestion, and it has been so generally misstated, that I am prompted to repeat it in its complete and correct form, and to thus submit it to the consideration of those who have the welfare of that great National project at heart, and who are concerned that it should be in all respects worthy of the Nation and of the event which it is to commemorate, and that, therefore, it should fully represent the best that we, as a people, are capable of doing.

My suggestion is this: that we would needlessly anticipate the anniversary of the great discovery by COLUMBUS by a celebration commencing in May, 1892, more than *five months* before the proper date, and that it will be better and more fitting to commemorate that event upon its precise anniversary, October 12th, 1892, by the unveiling or dedication then of the permanent memorial to the great discover, presumably

Exhibition, New York.

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The newspapers have frequently made use of the word "hustle" when referring to our ability to accomplish the work of construction with great rapidity. There is no question of our ability to erect by May 1st, 1892, or even sooner, all the shedding required; but will mere sheds, however vast or showy, fittingly meet the requirements of the occasion? Shall we deliberately commit ourselves to a programme which involves "hustling" in every detail; hustled plans, hustled architecture, hustled engineering, and hustled essays in decorative art; that is, haste in matters wherein haste is synonymous with crudity if not with failure; or shall we adopt a programme which, without violating the sentiment of the event, will afford sufficient time for our architects and engineers to perfect their plans, both of construction and ornamentation, and to produce the best of which they are capable, and thus insure structures of artistic merit and dignity. The incomparable site chosen by New York, and the vast expenditure already made for the adornment of Riverside and Morningside Parks, which are included within its limits, combine to make this argument less forcible here than if applied to any less favored locality, but suggest also the thought that a site so favored by Nature and Art should be crowned by structures worthy of, and in keeping with, their environment.

It is an unquestioned fact that since 1876 we have made great progress in all that relates to art, and that we are capable of much higher achievements now than then. But in the meantime the French have given us a far higher standard of exposition design and construction, so that it is incumbent on us to do the very best of which we are capable if we would avoid unfavorable comparison, and would make good our claim to equality with the nations of Europe in ability to design and produce great works of architecture and engineering.

The facts as to time are simply these: that the first advertisement for competitive designs for the Philadelphia Exhibition of 1876 was issued thirty-seven months, and that for Paris, 1889, was issued forty-five months, before the date of opening, all the remaining time in each case being utilized for most vigorous and active work of preparation, and proving barely sufficient. We have now remaining before May 1st, 1892, less than twenty-nine months in which to prepare for an exhibition intended to be vastly more grand than that of 1876, and at least equal to that of 1889. To attempt it in such inadequate time is to invite failure; to postpone it until a year later, thus obtaining a period of forty-one months for preparation, will make success assured.

The exhibition of 1876 educated *us* by bringing before us the products of other nations; the coming exhibition should educate other nations to a knowledge that we are competitors for the markets of the world, and as such have to offer not merely the products of our soil and mines, but also manufactures of almost every kind, comparable in price, quality and artistic merit with those of Europe, and excelling them at many points. The longer time of preparation which I urge will enhance the undoubted excellence of our industrial exhibit, and will ensure for its reception buildings which shall be true Palaces of Industry and Art.

Very respectfully,

HENRY R. TOWNE.

84 Chambers Street,
NEW YORK, December 6th, 1889.

Thos A. Edison Esq. Exhibitions - N.Y. - 1892

Dear Sir,

If you form any opinion in this matter, please communicate it to the press. I fear the committee will botch the matter

THE WORLD'S FAIR SITE

"IT IS WONDERFUL WHAT CLEVER MEN WILL DO WHEN A DOZEN OF THEM ARE SHUT UP IN A ROOM."

—*John Bright.*

COMPILED BY

CLARENCE CUNINGHAM.

52 E. 20th St

NEW YORK:

THE L. A. WILLIAMS PRINTING COMPANY, 32 CORTLANDT STREET.

1890.

A map of the proposed cites will be formed opposite page 7.

THE FAIR SITE.

The Committee on Site are brave men. They have undertaken to overcome almost unsurmountable difficulties.

Whether it is worth while to fix on so difficult a site on account of its accessibility and view, or whether it would be better to choose a level spot further away where land can be had without cost, and immediately, is the question here discussed.

I beg that each of the Committee will satisfy himself personally as to each of the following objections before finally determining to hold the World's Fair on the spot recommended by the Committee on Site:

The first objection is to the use of a portion of Central Park. In the *World* of the 28th inst., Mr. Crimmins says: "The trend of public thought now is to avoid the use of Central Park." The way to avoid its use is not to use it. The Park Commissioners object to its use.

The statute says: "It shall not be lawful to grant, use or occupy for the purpose of a public fair or exhibition any part of Central Park in the City of New York.

"The proposition to use a part of Central Park has aroused wide spread indignation among thoughtful people" "The public indignation shown in 1880 when the Park was wanted for a World's Fair in 1883 ought to have been a warning to this Committee, especially as this disapproval resulted in the law of 1881 forbiding the use of Central Park for such a purpose." This proposition to use the Park killed the proposed fair of 1883.

Numberless interviews have been published in the *Post*, *Commercial* and *World* opposing the use of any part of the Park. Super-

intendents of other city parks say the fair will seriously injure it. Samuel Gompers, President of the American Federation of Labor; Dr. John Hall; the Archbishop, and Bishop Potter are all opposed to its use. Numerous prominent bank presidents, members of the Cotton Exchange, and many others too numerous to recount have signified in the *Post* their opposition to its use. The law against it cannot be repealed until the meeting of the State Legislature. Congress meets before that time; nor is it probable that the Legislature will repeal the law of 1883 in the face of such opposition, and if they should repeal it, the Governor would probably veto the bill.

The specific objections to its use are :—that it will destroy a natural forest said, by experts, to be impossible to replace.

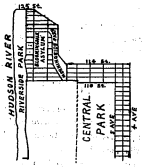
That it will interfere with its proper use as a Park.

That the portion proposed to be taken is unsuitable, rocky and hilly. Only thirty-five acres being available of the 250 proposed to be taken.

"In choosing Central Park against the law" the *Tribune* of the 20th inst. says :—"The Committee have made no choice, the thing must hang and paralyze the other Committees." To attempt to take Central Park will defeat the project.

The Committee at its first meeting passed a resolution against the use of Central Park. They afterwards resolved to use a part of it. In interviews in the papers to-day some of the committeemen say they hope they will not be obliged to use the Park. They may change their minds again. But the people, the law, and the Park Commissioners forbid its use.

Certain of the Committee are very reluctant to give up the use of a portion of the Park, because they see that without it the remainder of the site is a disjointed, ill-shaped, straggling, irregular piece of ground, long, crooked and utterly unsuitable for fair purposes. The map opposite will show the shape, but not the roughness, of the proposed site. Leaving out Central Park it resembles a rudder. I hope whoever is at the helm will not steer the enterprise to destruction.



REGE & BRAND, LITH. 18 BARCLAY ST. N.Y.

What kind of handsome grouping or general effect can be made on such a shaped piece of ground, especially since it is so rugged?

Without the Bloomingdale and Cathedral grounds its shape becomes ridiculous, especially to those who have seen other fairs, and know that they should be held on a compact square plot of ground, and one of the Commissioners has stated that Bloomingdale cannot be obtained. From one end to the other of the proposed site is nearly three miles with its windings. Besides its shape there are other grave objections. "The whole section above the Park is cut up by raised streets at intervals of two hundred feet, leaving blocks to be filled before this space is levelled." Near the northwesterly end of the Park are holes thirty-five feet deep between the streets. The cost of filling these will be millions of dollars, if the dirt can be obtained, which is doubtful; and the time consumed will be several years.

More legislation will also be required to obtain permission for the closing of the streets in the proposed area. It is not certain that such legislation will be obtained. By reason of the shape and location of the site it will shut off for three years every available drive above Central Park. Not a single one will be left.

To the west of Central Park the ground is rocky, and in 110th street the rocks stand twenty-five feet sheer above the street level. The Morningside and Riverside Parks consist principally of rugged hill-side with no sufficient space for buildings, and most of the level land between them is occupied by the Bloomingdale and Cathedral lands which cannot be obtained in time. The *Commercial* of the 21st inst. says: "One might as well choose a site in the moon."

The elevated structure, which is certainly not ornamental, passes over the proposed site, and the dropping of cinders, oil and water will not be agreeable to those underneath.

But the principal objections to this site are the delays necessary before obtaining it, the delays in preparing it after it has been obtained, and the cost.

First, the delays occasioned by the doubt whether it can be

obtained at all, especially if Central Park be included. Second, the delays in obtaining legislation for the use of Central Park, if it is to be used; in obtaining permission to close the streets; in obtaining an act to condemn the land by right of eminent domain, some persons being doubtful whether such legislation would be constitutional.

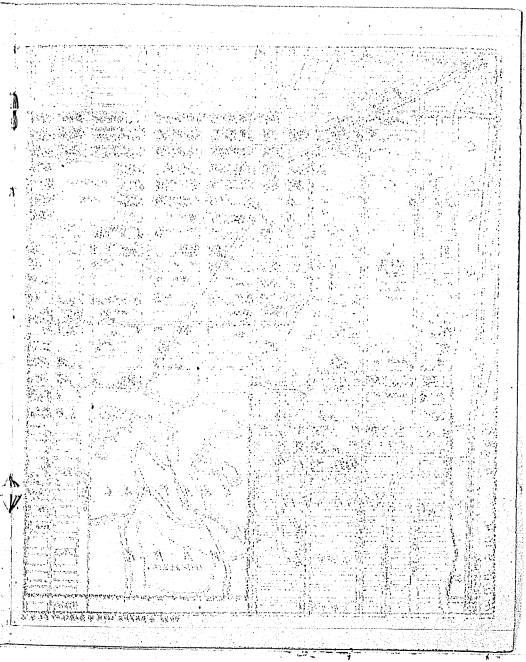
This preliminary would take at least six months, the whole scheme hanging in doubt in the meantime. After this comes the delay in acquiring title to the land either for lease or absolute fee, and this process will be necessary because if every adult owner consented to lease his land—and some will not, and many are absent from the city—still there are infant owners who cannot consent, and their lands must be taken by due process of law.

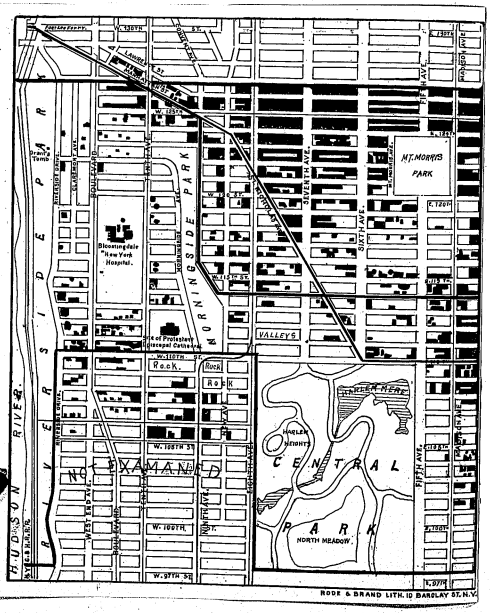
Not a stroke of work can be done until all this is effected.

The shortest time in which I have ever known it done for a large body of land is two years, thus making two years and six months before any work can be done.

After all this it will take an indefinite period to prepare the ground before any buildings can be erected. As stated before, the ground north of the Park is from five to thirty feet below the present grade of the streets. Some of the ground west of the Park is thirty feet below the grade of the streets, while some of it has twenty feet of rock above the street.

I do not believe that this land, after getting possession of it, can be prepared within one year for buildings. If these calculations are correct, and I think any good lawyer will confirm the first part of them, and that any good engineer, who is acquainted with the difficulty of obtaining material for filling in lots in that neighborhood, will c nfirm the second part of my calculation. If these calculations, I say, are correct, then it will be three years and six months before the foundation can be laid for the fair buildings. To construct the buildings will take a year and six months at least, and more if any extraordinary structures are attempted. This will bring us to the autumn of 1894, instead of the spring of 1892.




HUDSON RIVER
RIVERSIDE PARK
MORNINGSIDE PARK
MT. MORRIS PARK
CENTRAL PARK
NORTH MEADOW
HARLEM HEIGHTS
VALLEYS
RESERVOIR
Grant's Tomb
Riverside Drive
Claremont Ave.
Amsterdam Ave.
Manhattan Ave.
Morningside Ave.
Lenox Ave.
Fifth Ave.
Madison Ave.
Park Ave.
Bloomingdale "New York Hospital."
Site of Protestant Episcopal Cathedral
W. 125TH ST.
W. 116TH ST.
W. 110TH ST.
W. 106TH ST.
W. 102D ST.
W. 97TH ST.
E. 125TH ST.
E. 120TH ST.
E. 110TH ST.
E. 106TH ST.
E. 102D ST.
E. 97TH ST.
Rock
ROCK
ROCK
ROCK

building a bridge between the high ridges, as has been proposed by Mr. Crimmins, will bring the cost of leasing the land, and preparing it, to near twenty million dollars, without a building on it. But the delays necessary for these proceedings and works are even more fatal than the cost, and if much of the land had to be purchased, it would be more than double this estimated cost.

The greatest point made in favor of this site is that it is so accessible.

But it is well known that the elevated road has as much business as it can now properly attend to, and the president of the Central road says, in substance, it is doubtful whether it would pay them for such a short haul to make tracks and depots at Fifth avenue, as proposed in the *Herald* of the 28th inst. The three street-car lines, which are but bob-tail concerns, could not convey back and forth many passengers. It is much too far to walk.

Although there is a beautiful view from this site, and the Committee seems to have been carried away by this outlook, the delays, difficulties and expense of the site are such that if it is adhered to it will cause the ultimate failure of the enterprise.

There are many difficulties I have not had space to allude to; in fact, the proposed site, like a porcupine, so bristles with difficulties that it is dangerous to touch it, and many men of intelligence characterize it as an absolutely impossible site.

I ask each of the General Committee on the World's Fair that can possibly spare the time to test these statements by a personal examination of the grounds, and by inquiries of disinterested lawyers, brokers and contractors. The only way I can account for the selection of this site is by reason of the eloquence of Mr. Flower, to whom I will apply Tristram Shandy's description of his father: "He was certainly irresistible both in his orations and disputations. Persuasion hung upon his lips." Mr. Crimmins also was eloquent. He explained that the land and houses north of the Park could be obtained at small cost. That the two great hills in the Central and

the Morningside Parks could be connected by a long bridge, and that the lake of twelve acres could be drained. This buying of land and houses, building of bridges and draining of lakes, brings pleasant recollections of Aladdin's Wonderful Lamp.

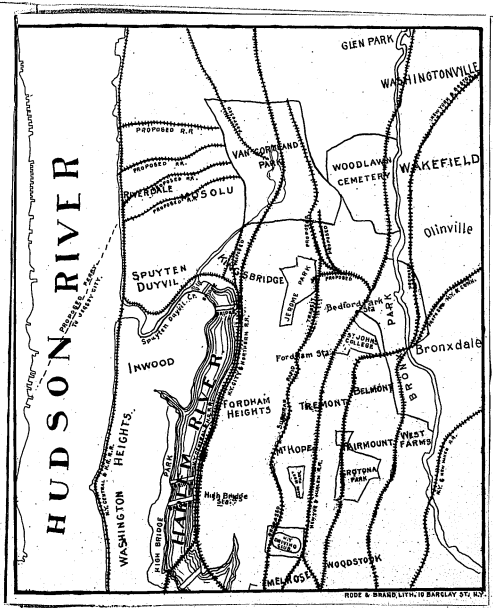
If you go on this land, go to 110th street and 8th avenue, and look at the great hollows, which may be the graves already dug for this enterprise; go to the hill in Morningside Park and look down upon the buildings. Go to 110th street and 9th avenue and look at the rock and remember that this land will cost vast sums to acquire, either by lease or purchase; other vast sums to improve, and a great delay and waste of time and uncertainty, and you will see also that this site, leaving out the Park, will cut off all driving above 110th street.

The Committee on Site "seem like a fine herd of cattle in a large field, deserting the good grass in the meadow which is abundant about them, and delighting themselves by fighting over a bed of nettles in a hilly corner of the field."

Above this site are several fine ones with abundance of room and level ground, where the land belongs to the city and can be had without cost or delay, to which the commutation fare is but five cents from the ends of the elevated roads, which are convenient to the Hudson or Harlem River, or Sound, and which can be reached in twenty minutes more time. This slight extra expense of time and money will deter no one who has the slightest desire to go to the fair. Many people will come thousands of miles to see it, and it is not reasonable to suppose that anyone, who can afford to go at all, cannot afford to spend the extra five cents each way. It is more important to have the buildings handsomely grouped together and a fine general effect than to have them so very close to the centre of the city, and the extra five or ten miles travel will weary the visitors less than the long journeys between the buildings in the proposed rough, ill-shaped, far-stretching and narrow site, which will necessitate a journey of more than two miles to traverse it.

I would respectfully suggest that if this site should have to be abandoned, and that if the Committee should have occasion to visit any other site that they should go by the railroads or street cars in the same manner in which the majority of persons will have to visit the fair, and so they can better judge of its actual accessibility. I have appended a map of some of the other proposed sites.

If this pamphlet serves no better purpose it may give warning of the difficulties to be overcome in the almost too short a time we have, and perhaps serve as a stimulous to exertion.



1889. Exhibitions - Paris Exposition (D-89-46)

This folder contains correspondence and other documents concerning Edison's exhibit at the Paris Universal Exposition. Also included are letters relating to disagreements between Edison's agents, William J. Hammer and George E. Gouraud. Related items regarding the contract for electric lighting at the Exposition can be found in the Miscellaneous Legal Series.

Approximately 90 percent of the documents have been filmed. The following categories of documents have not been filmed: routine correspondence pertaining to shipping arrangements for exhibition items; letters of transmittal; duplicate copies of selected documents.

T.E.

Telegrams and Cables,
"PHONOGRAPH, LONDON."

Telephone,
No. 1962.

EDISON'S PHONOGRAPH CO.,

Edison House "B," Northumberland Avenue, S.W.
LONDON. 5th January, 1889.

T.A.Edison Esqr.,
Orange,
New-Jersey,
U.S.A.

My Dear Edison:-

Referring to your letter in regard to the Paris Exhibition Iam very pleased to receive the information that it contains and think you are fortunate in your choice of a representative, whose efficiency is about fully demonstrated in connection with the Crystal Palace Exhibition some years ago. I shall of course expect that as regards the Phonograph he will take no initiative in any way in Paris without consulting me, and presume that this will accord with your own views,as by that time I shall have my arrangements in hand in Paris and no one knows better than yourself the impossibility of having two heads to one business, a truism which our friend Mr Hammer will no doubt appreciate.

The President of the Electric Light Co Paris has written me several letters and also seen me with regard to the placing of the Phonograph, but I suppose there will be but one Edison Exhibition and the one of course that you will make is the one in which the Phonograph should find its natural home.

Yours sincerely
G.E.Gouraud.

EDISON PHONOGRAPH
LABS
LABS OF DICTATION

Paris 6.11

Form No. 1.

THE WESTERN UNION TELEGRAPH COMPANY.

This Company TRANSMITS and DELIVERS messages only on conditions limiting its liability, which have been assented to by the sender of the following message. Errors can be guarded against only by repeating a message back to the sending station for comparison, and the company will not hold itself liable for errors or delays in transmission or delivery of Unrepeated Messages, beyond the amount of tolls paid thereon, nor in any case where the claim is not presented in writing within sixty days after sending the message.

This is an UNREPEATED MESSAGE, and is delivered by request of the sender, under the conditions named above.

THOS. T. ECKERT, General Manager. NORVIN GREEN, President.

NUMBER	SENT BY	RECD BY		CHECK
2	W	D.	2 9 Pd	4 4 4

Received at **ORANGE, N. J.** 3 14 Jan 8 1889

Dated Schenectady Ny 8

To Daniel Drawell

or Thos A Edison

Tell Edison material number four hundred twenty read this morning is best we ever had have him get some out but making it slightly more non inflamable Kruesi

Paris E.R.6.11

Form No. 1.

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THOS. T. ECKERT, General Manager. NORVIN GREEN, President.

NUMBER	SENT BY	RECD BY		CHECK
12	W	D.	2 2 Pd	

Received at **ORANGE, N. J.** 10 2 Jan 11 1889

Dated Schenectady Ny 11

To Thos A Edison

Edison Laby

Tell Hammer we shipped disc dynamo to the Laboratory Jany 9 1889 in Merchants despatch car fifty thirty five John Kruesi

ack 14/2/89

Jany. 25th. 1889

T.A.Edison Esqr.
Orange

Dear Sir,

Your letter of January 11th. concerning the Paris Exhibition will have crossed mine to you answering your former letter in this connection. Your letter at present under reply proposes that I shall share equally with yourself, the expenses of exhibiting the Phonograph on that occasion, and you ask me for any suggestions I may have to make in connection with this proposed exhibition. I have no objection to sharing expenses directly attendant upon the exhibition of the Phonograph, and presume you will consider it to your advantage as I do to my own, that in that case, I should have control of that expenditure. I presume that whatever is done with the Phonograph on that occasion will also be under my direction, as it will not answer to have anyone acting in Paris in connection with the Phonograph independently of myself; this view I presume is only anticipating your own, but I mention it to you in order to show that I am carefully considering all the aspects of any suggestion you may be good enough to make to me.

I cordially sympathise with the plan of having the Phonograph a part of your general exhibit under such circumstances, especially, as it will be the attraction, and an Edison exhibit without the Phonograph, would be, obviously, the play of Hamlet without Hamlet.

As regards the suggestions you invite concerning this exhibition, I am so completely ignorant of everything appertaining to the exhibition in general that I do not feel competent to make

any, but when I go to Paris, which will be soon, I shall, of course, be further informed and will then be able to consider your request and will write you further.

The only things I have already thought of I might mention here; First, to have constant Phonogramic communications passing between London and Paris arriving from London at the exhibition by every mail, so that people could see the actual Phonogram mails coming in, opened, and hear them. I should employ someone here and there to do nothing else but attend to these communications. I should endeavour to get distinguished people to send messages from either end to friends at the opposite end and send a postcard intimation by the same mail informing them of the fact that on calling at a place which shall be indicated -- possibly the offices of the Company, which are now settled in Edison House, Northumberland Avenue,-- where they could be interpreted, or rather listened to. This would be a great card, showing most forcibly the enormous practical value the new and coming system of communication has.

Second: If your portable Phonograph is ready by that time, I should have mounted tricycle messengers in uniform flying all over Paris as well as London delivering these communications and interpreting them. This would be the finest card conceivable worth thousands as an advertisement and do more towards a speedy development of the practical phase of the Phonograph than can be imagined. I have practically settled upon the form of tricycle and it would carry a mast bearing a little tin pennon, on which would be written the words "Phonogram Express"

Any further suggestions that occur to me I shall be pleased to communicate to you

Faithfully Yours,

G.E.Gouraud.

SPECIMENS FURNISHED PHONOGRAPH
BY EDISON COMPANY
UNITED STATES PHONOGRAPH DICTATION

Form No. 1. P. O.

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This is an UNREPEATED MESSAGE, and is delivered by request of the sender, under the conditions named above.

THOS. T. ECKERT, General Manager. NORVIN GREEN, President.

NUMBER	SENT BY	REC'D BY	CHECK
14	Ui	ab	2h Co

Received at Orangenj Jan 28 1889

Dated Newyork 28

To Thomas A Edison Paris Exposition Orangenj

Did you not receive my letter of Jan 24" enclosing two bills amounting Edward C. Cockey Supt Supplies

Form No. 1. P. O.

THE WESTERN UNION TELEGRAPH COMPANY.

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THOS. T. ECKERT, General Manager. NORVIN GREEN, President.

NUMBER	SENT BY	C. REC'D BY	CHECK
26	Ui	ab	2hCo

Received at Jan 28 1889

Dated Newyork 28

To Thomas A Edison Paris Exposition Orangenj

I am in receipt of a letter from M J Hammer dated Jany 26" wherein he claims that my letter of the 24" and the bills contained in it had not come to hand. He asks me to ship the boxes to your address at Orange NJ marked Paris Exposition. I have the boxes all ready addressed, await ing the arrival of the expressman. Shall they be sent at once

Edward C. Cockey Supt Supplies

Paris Exhibit

Paris Offices,
27 AVENUE DE LA BOURDONNAIS.
Cable Addresses,
NEW YORK, "UNIVERSAL."
PARIS, "USCOM."

UNITED STATES COMMISSION TO THE PARIS EXPOSITION OF 1889.

WILLIAM B. FRANKLIN,
Commissioner-General.

SOMERVILLE P. TUCK,
Assistant Commissioner-General.

WASHINGTON BUILDING, No. 1 BROADWAY, NEW YORK, N. Y.

JH

ans. 2/2/89

New York, Jan. 31, 1889.

Mr. Thomas A. Edison,

Llewelyn Park, N. J.

Dear Sir:-

This Commission is in receipt of an application for allotment of space for Edison's Electric Pen. The application is made by John William Godfray, 78 rue de Richelieu, Paris, France. I bring this matter to your attention for the purpose of ascertaining whether you will make an exhibit of your Electric Pen, or if you will approve of the exhibit made by Mr. Godfray.

Yours truly,

Somerville P. Tuck

Asst. Com.-General.

Paris Ex.

THOMAS A. EDISON, President.
CHAS. BATCHELOR, Vice Pres't.

SAMUEL INSULL, Treas. & Genl. Manager.

J. HUTCHINSON, Secretary.
JOHN VAUX, Ass't Gen'l Manager.

THE EDISON MACHINE WORKS.

CABLE ADDRESS "EDISON, SCHENECTADY"

BRANCH OFFICE, 10 DEY ST., N.Y. CITY.

Schenectady, N.Y. January 31st. 1889

Thomas A. Edison, Esq.
Edison's Laboratory.
Orange. N. J.

Dear Sir:-

Referring to our telegram of even date, elsewhere confirmed, with relation to material for the Paris Exposition, we beg to say that we have been endeavoring for the past four or five days to obtain full shipping instructions from Mr. Hammer, but without success.

We this morning received 60 Shipping Tickets for use in connection with this shipment. Three of these tickets have to be tacked on each case, and the number we have received would therefore be sufficient for but 20 cases, whereas we have 35 cases all ready to go forward. We have figured up approximately and find that we will require 144 tickets, but for safety 150 should be sent us. We do not mean 150 additional, but 150 less the 60 ~~above~~ referred to above.

The Invoices state at the bottom that the exhibitors name must be written thereon, and we have taken the liberty of signing it in order that no delay will occur in the first consignment, which goes forward to-day. We have never been informed as to whether these

THE EDISON MACHINE WORKS.

~~T.A.E. Continued.~~ (2) 1-31-1889

Invoices should go to you for signature or not.

Mr. Hemmer has sent us numbers from 10 to 40 inclusive to be placed on each case, stating that he would send us a further lot of numbers later on, but these have not yet come to hand. We have thereforeused our best discretion and continued numbering them, placing before each number the letters "E.M.W". If we are to get this material on board the Steamer by the 15th. of February, we shall have to have full instructions as to exactly how we are to proceed at once. Will you kindly turn this letter over to Mr. Hemmer, with whatever comments you may think proper in the premises.

Yours very truly,

The Edison Machine Works.

By [signature] Gen. Mgr.

60 sent
Grant 150

Form No. 1.

THE WESTERN UNION TELEGRAPH COMPANY.

This Company TRANSMITS and DELIVERS messages only on conditions limiting its liability, which have been assented to by the sender of the following message. Errors can be guarded against only by repeating a message back to the sending station for comparison, and the company will not hold itself liable for errors or delays in transmission or delivery of Unrepeated Messages, beyond the amount of tolls paid thereon, nor in any case where the claim is not presented in writing within sixty days after sending the message.
This is an UNREPEATED MESSAGE, and is delivered by request of the sender, under the conditions named above.

THOS. T. ECKERT, General Manager. NORVIN GREEN, President.

NUMBER	SENT BY	REC'D BY	CHECK
26	DL	ab	10 paid

Received at ORANGE, N. J. 441 Feb 5 1889

Dated Newyork 5

To W. J. Hammer c/o Edisons Lab'y

Shipped three cases and twelve tops send tomorrow two cases

B D Chandler

Form No. 1.

THE WESTERN UNION TELEGRAPH COMPANY.

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This is an UNREPEATED MESSAGE, and is delivered by request of the sender, under the conditions named above.

THOS. T. ECKERT, General Manager. NORVIN GREEN, President.

NUMBER	SENT BY	REC'D BY	CHECK
19	Mi	S	19 Pd

Received at ORANGE, N. J. 12th Feby 6. 1889

Dated Newyork 6 311

To Wm J Hammer

Orange

Word from Albany all legs ready friday Ship by freight wont arrive here before monday if express arrive saturday

B D Chandler

Form No. 1.

THE WESTERN UNION TELEGRAPH COMPANY.

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This is an UNREPEATED MESSAGE, and is delivered by request of the sender, under the conditions named above.

THOS. T. ECKERT, General Manager. NORVIN GREEN, President.

NUMBER	SENT BY	REC'D BY	CHECK
45	Dy	Vo.	18 pd

Received at ORANGE, N. J. 603 Feb 8 1889

Dated Newyork 8

To Thomas Edison

Paris Exhibition

Letter received at five too late for todays engagement will meet you tomorrow Orange at three P.M.

Allard

John W. Mackay, President
Hector de Castro, Vice-President
Geo. G. Ward, Secretary and Genl. Manager.

Executive Offices
Washington Buildings
1 Broadway.

New York, Feb. 25-89 18

T. A. Edison Esq.,
Orange, N.J.

Dear Sir:-

The French Govt are preparing for the Paris Universal Exhibition an exhibit, which is called the "Exhibition of the history of retrospective work and of anthropological sciences." This exhibition embraces all original inventions and is under the direction of the Conservatory of Arts and Metiers of France. Col. Laussedat the Director of the Conservatory requests me to ask you if you would kindly loan for this exhibition one of your first "Phonographs." Col. Laussedat adds that although a young man your fecondity in inventions is such that you may justly be called not only a father but an ancestor of science, and he desires that you should have a place in the "Palace consecrated to the history of work."

If you will kindly favor me with an early reply, I will have the Director address you his request officially.

Yours very truly,

Hector de Castro

Thomas A. Edison,

"Paris Exposition"

Address all communications to
Thomas A. Edison, "Paris Exposition,"
Orange, N. J.

Mch 1st 1889

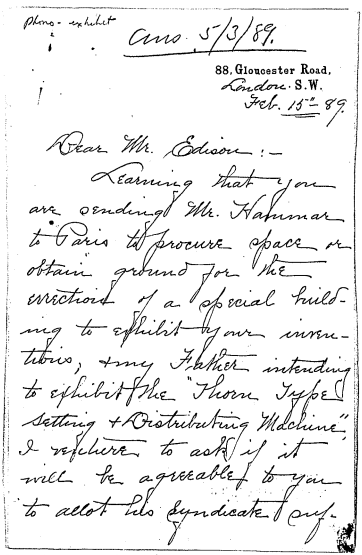
Mr Edison

I think something of this kind an excellent adjunct to the Phonograph Dept & propose to show some type writing & type setting by phonographic dictation, however I think I would suggest your cabling them to await my arrival in London when I can make arrangements with them for space position &c. We are too crowded to give them much space & certainly want their exhibit & the subsidiary to our own & should be in London in about ten days they can see me about it. This is however only my suggestion which is I believe what was asked for

Yours very sincerely,

W. J. Hammer

[ENCLOSURE]



plans - exhibit

Canc. 5/3/89.

88. Gloucester Road.
London. S.W.
Feb. 15th 89.

Dear Mr. Edison :—

Learning that you are sending Mr. Hammar to Paris to procure space or obtain ground for the erection of a special building to exhibit your inventions, & my Father intending to exhibit the "Thorn Type Setting & Distributing Machine" I take the liberty to ask if it will be agreeable to you to allot his syndicate a suf-

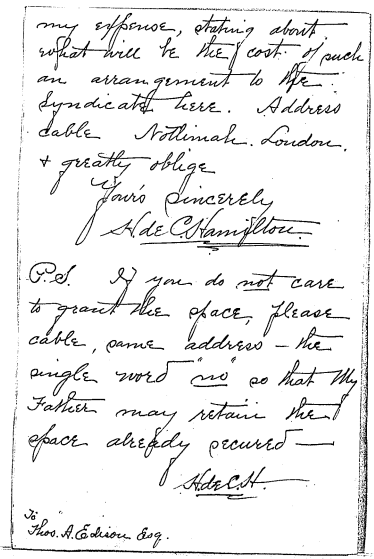
[ENCLOSURE]

ficient space, say about ten feet square; as to my mind it would help demonstrate the practical value of the electrical motor, + commercial utility of the Phonograph.

The "Thorn Machine" stands alone in having profitably met all the stern requirements of news-paper work, is rapidly being introduced both here + in America as it is recognized to have solved the problem of setting type by machinery, + it would be the intention to show the rapidity with which matter could be set up through the instrumentality of the Phonograph in ~~conjunction~~ conjunction with the "Hyfrynmech." Moreover, as it requires power the electric motor has been suggested, the fact is now being installed to run the Thorn machines, ordered by the "Bradford Observer", news-paper proprietors.

I enclose some documents anent the "Thorn" + if you feel disposed to favorably consider this proposition please cable, at

[ENCLOSURE]



my expense, stating about what will be the cost of such an arrangement to the Syndicate here. Address cable Nottimah. London. & greatly oblige

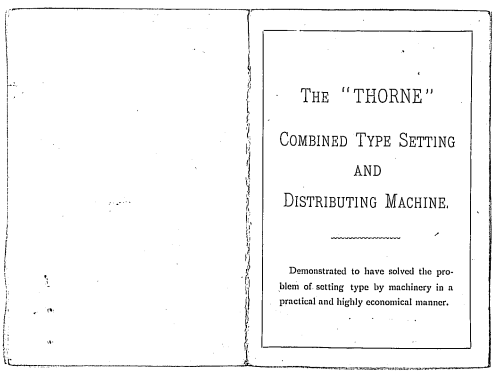
Yours Sincerely
Hde C. Hamilton

P.S. If you do not care to grant the space, please cable, same address – the single word "no" so that My Father may retain the space already secured —

Hde C.H.

To
Thos. A. Edison Esq.

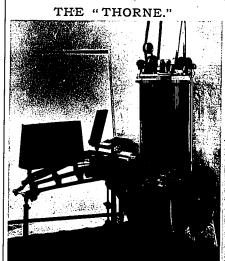
[ENCLOSURE]


THE "THORNE"
COMBINED TYPE SETTING
AND
DISTRIBUTING MACHINE.
Demonstrated to have solved the problem of setting type by machinery in a practical and highly economical manner.

[ENCLOSURE]

Quad=5

THE "THORNE."



Height, 5 feet 6 inches. Weight, 950 pounds.
Driving Power, nominal.

The "THORNE" Machine comprises a distributing as well as a setting mechanism, either of which may be operated independently or both *simultaneously*.

Distributes half a million ens at an expense of a few shillings.

Composes with the *utmost celerity* and at *minimum cost*.

Through the courtesy of Messrs. ALLEN, SCOTT and Co., 30, Bouverie Street, London, E.C., the presentation of this card will obtain an inspection of their "THORNE" Machines in practical operation.

TYPE SETTING SYNDICATE, LIMITED,
HUGH HAMILTON,
Managing Director,
2, Copthall Buildings,
Angel Court, London, E.C.

[ENCLOSURE]

The Hartford Evening Post.

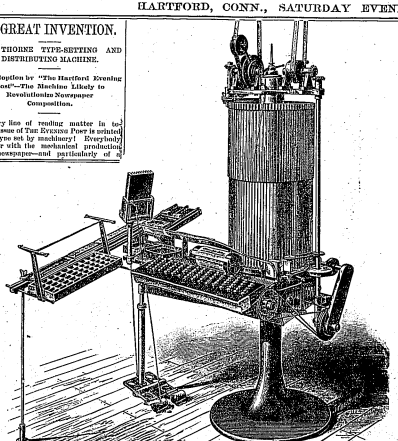
HARTFORD, CONN., SATURDAY EVENING, DECEMBER 1, 1888.

A GREAT INVENTION.

THE THORNE TYPE-SETTING AND DISTRIBUTING MACHINE.

Its Adoption by "The Hartford Evening Post"—The Machine Likely to Revolutionize Newspaper Composition.

Every line of reading matter in to-day's issue of THE EVENING POST is printed from type set by machinery! Everybody familiar with the mechanical production of a newspaper—and particularly of a



ran be made. The Thorne company has had orders three months ahead of supply for months past, although its facilities for manufacturing the machines is being constantly increased.

[ENCLOSURE]

The Thorne Type-Setting and Distributing Machine.

daily paper of the size of THE POST—will understand the significance of his remarkable statement. No other daily paper in this country, if indeed in the world, has reached the same stage in its application of machinery to the requirements of its composing room. A few dailies, like The New York Tribune, The Chicago News and The Washington Post, have recently got a part of their type by machinery; but it has remained for THE HARTFORD EVENING POST to pioneer the new departure from the time-honored usage of newspapers to depend upon hand composition as the only reliable means for presenting their daily or weekly issues to the public. There is perhaps no branch of mechanical industry in which there has been during the last hundred years so little advance, as in the art of type-setting. While the power printing-press has practically revolutionized the publishing business, type setting by hand is still performed precisely as it was in the days of Franklin, indeed ever since the invention of movable types; and it has long been a matter of very grave doubt whether machinery would ever supplement, much less supersede, the labor of the human "type-sticker." But it now looks as if the unexpected had happened, and the type-setting machine were about to take permanent place among the other labor-saving machinery which the present century has so wonderfully contributed to the material progress of the human race.

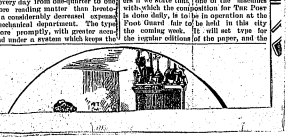
The Thorne Type-setting machine, with the aid of which this paper is now and has for some months been regularly produced, and of which the above engraving is an accurate illustration, is the invention of Joseph Thorne, from whom the machine and the company now engaged in its manufacture were named. The invention dates back to 1880, although the improvements which the last eight years of mental and mechanical labor upon it have effected have so metamorphosed the original that the present perfected machine scarcely resembles the crude affair which first embodied the inventor's scheme. Several of the latest and most valuable improvements in the working details of the machine have been introduced by the present manager of the company, Mr. R. W. Nelson, who was associated with Mr. Thorne some time before the latter retired from the company in 1887, and through whose personal connections the company retained its foothold in England and established its English branch. At various times the Thorne has been briefly exhibited and tested in competition with other type-setting machines, in both America and England, with results most decidedly in its favor. It is doubtful, however, if any other machine has ever been subjected to the severe test which has now been applied to the Thorne by its continuous use in the office

place in the continuous line of reading matter which the operator is "setting." This continuous line is broken up into shorter lines and justified to a proper length for the columns of a newspaper or the pages of a book, according to the work on which the machine is employed.

The process of distributing the types is carried on, as before indicated, automatically, and with very much greater rapidity than, and at the same time with the setting. When the setting cylinder is full the distributing cylinder ceases to revolve, but may be started again instantly at the will of the operator whenever it becomes necessary to replenish the former; and then the distributing mechanism is active or at rest according to the demand made upon it by the activity of the operator. It is an exceedingly interesting feature of the machine, which alone gives it great advantage over hand work, that no time is required to "fill the cases," the automatic distributing cylinder rendering the supply of types in the setting cylinder continuous and inexhaustible.

Three persons are required to operate each machine: one at the keyboard, a second to break up and justify the lines, and the third to keep the distributing cylinder "loaded" and maintain a general supervision. With expert help one machine will set and distribute six thousand ems per hour, or from five to six times as much as the most rapid hand compositor. The work is not particularly laborious, and it is found by experience that intelligent girls are fully as well adapted as men to become efficient operators. The machines in this office have until recently been run by an electric motor; but they are now connected with both the motor and the steam engine which furnishes power for the machinery in the press-room, as a provision against possible detention by accident to either source. They are so light-running that a single horse power is sufficient for half a dozen machines.

We consider this the most important step that has yet been taken by any daily paper in this city. And it is manifestly in the right direction. By the introduction of these machines we are able to furnish every day from one-quarter to one-third more reading matter than heretofore, at a considerably decreased expense in the mechanical department. The type is set more promptly, with greater accuracy, and under a system which keeps the



The interesting process of setting type by machinery is so thoroughly novel to everybody that its introduction here has occasioned a constant variation of curious observers at THE POST composing room during the last few months, or since the use of the machines here has been known. We are always glad to thus gratify the very reasonable inquisitiveness of the great army of POST readers, and shall welcome them as often as they may be disposed to call.

It is not necessary for the publishers of this paper to affirm in words their belief that machinery is destined to do the bulk of the newspaper and book composition of the world,—for that the Thorne is the machine now best adapted for this tremendous service. Actions speak louder than words. The significant fact is that we have actually displaced hand composition by the Thorne type-setter for all editions of THE POST, and have made the substitution only after having demonstrated by continued experiment that we can thus get better work than by old methods, at a great saving of expense. The machines have thus far in our experience substantiated every claim of the inventor.

For the benefit of newspaper publishers, by whom as well as by book printers the Thorne type setter is destined to be generally used,—it should be said that the proprietors of THE POST have experimented with no less than five different foundries types, for the purpose of determining if any one might possess an advantage over the others in practical use by the machine. While all varieties of type are adaptable to it, we find by experience that the self-spacing type of Messrs. Benton, Waldo & Co. of Milwaukee, Wis., is much more profitably used than any other in the machine,—results showing an advantage in its favor of almost eight per cent. in all sizes from nonpareil to long primer. As a consequence, we use on THE POST only Benton & Waldo's type, and should certainly advise newspaper publishers using the machine when selecting a new dress to give preference to this foundry for the reasons above stated.

It may be of interest to our city readers if we state that one of the machines with which the composition for THE POST is done daily, is to be in operation at the Post Guard fair to be held in this city the coming week. It will set type for the regular editions of the paper, and the

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The Thorne Type-setting machine consists of two iron cylinders, about fifteen inches in diameter, placed perpendicularly one above the other, in the external surface of each of which are cut longitudinally ninety channels or receptacles for the types which are to be used in it. Within the channels of the lower cylinder are inserted "wards," or small steel projections extending in various relative positions through their entire length, which correspond respectively with "nicks" specially made in the type—the purpose of which is, in distributing the letters, to automatically direct each letter from the mass of letters in the super or distributing cylinder to its appropriate place in the lower or setting-cylinder, so that each channel in the latter shall receive types of only the particular character intended for and adapted to it. The work of distribution is thus carried on automatically by the revolution of the upper cylinder upon its axis, which in rapid succession places the various types in position to be released from the distributing-cylinder, when they instantly drop of their own weight into orderly position in the setting-cylinder, as above indicated. The type-setting is performed by manipulations upon a key board on which the characters of the language are represented, very much as upon an ordinary type-writer. These keys communicate directly with the setting-cylinder above mentioned, each stroke of a key releasing a letter, and, by the aid of a traversing disc, transferring it from its channel in the cylinder to its place in the continuous line of reading matter which the operator is "setting." This continuous line is broken up into shorter lines and justified to a proper length for the columns of a newspaper or the pages of a book, according to the work on which the machine is employed.

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We consider this the most important step that has yet been taken by any daily paper in this city. And it is manifestly in the right direction. By the introduction of these machines we are able to furnish every day from one-quarter to one-third more reading matter than heretofore, at a considerably decreased expense in the mechanical department. The type is set more promptly, with greater accuracy, and under a system which keeps the

The Machine as Seen in Operation in "The Post" Composing Room.

forms open for news several minutes later than could be done under the old regime without the employment of a reserve force who must be paid more or less for waiting time during the early hours of the day. With our new and rapid machinery, in the press-room, reinforced by the powerful auxiliary of a full complement of three wonderful timesaving devices for speedy type-setting, THE POST is better equipped mechanically to contest the claims of rival journals upon this field than it ever has been before, and so far in advance of all its local contemporaries as to render comparison absurd.

The interesting process of setting type by machinery is so thoroughly novel to everybody that its introduction here has occasioned a constant visitation of curious observers at THE POST composing room during the last few months, or since the use of the machines here has been known. We are always glad to thus gratify the very reasonable inquisitiveness of the great army of POST readers, and shall welcome them as often as they may be disposed to call.

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It may be of interest to our city readers if we state that one of the machines with which the composition for THE POST is done daily, is to be in operation at the Post Guard fair to be held in this city the coming week. It will set type for the regular editions of the paper, and the public who visit the fair will be able to see the interesting process of type-setting by machinery precisely as it is done from day to day at this office.

It may be of interest to state further that thirteen of these machines have been sent to England the present year, and six more are already ordered for the same destinations. Four of the machines have been in use for some time by the Publishers' Printing company, 257 William street, New York; and the largest printing house in New York, that of J. J. Little & Co., has just ordered four to be put into its establishment as soon as they

[ENCLOSURE]

Paris

aus. 25/3/89

REVUE
de
L'EXPOSITION
UNIVERSELLE
de
1889

F. G. DUMAS
Directeur

L. DE FOURCAUD
Rédacteur en Chef

LIBRAIRIE
des
IMPRIMERIES RÉUNIES
MOTTEROZ, Administrateur
17, Rue Racquet
PARIS

Paris, le March 3rd 1889.
53 Boulevard St Michel

Dear Sir,

It is our intention to publish in the "Revue de l'Exposition Universal"—— a work that will appear weekly during the period of the Paris Exhibition and will eventually form a volume of lasting interest both from a literary and artistic point of view —— a series of articles upon the great intellectual and scientific movements of the century. Among eminent men who have already promised contribution are M. Pasteur,— on his discoveries; M.Alexandre Dumas — on the present condition of the stage; M.Jules Simon —on progress; M.Ernest Renan — on the philosophy of the century; M. Théodore de Banville;— on the poets of the century; and M.Eiffel — on iron structures.

We feel that such a series of articles would not be complete if the subject of the development of electrical science and its application during the present century were omitted. We therefore venture to address ourselves to you, as the highest authority on the triumphs already achieved by electricity and its potentialities as yet undeveloped in relation to modern life, and beg that you will do us the honor of being allowed to include your name with those of our other contributors.

If an article dealing with the subject of electrical science would impose too severe a tax upon your leisure, it would give us much pleasure to publish any autobiographical sketch with which you might be so kind as to favor us.

We, Sir,
Faithfully yours,

F.G. Dumas

John W. Mackay, President.
Hector de Castro, Vice President.
Geo. G. Ward, Sec'y and Gen'l Manager.

Executive Offices,
Washington Building,
1 Broadway,
New York.

Mar. 4th, 1889.

T. A. Edison Esq.,

Dear Sir:-

Please accept my thanks for your kind letter of the 28th ult. contents of which I have cabled to Col. Laussedat.

Yours very truly,

Hector de Castro

Form 2a. Long Exhibition

THE WESTERN UNION TELEGRAPH COMPANY.

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This is an UNREPEATED MESSAGE, and is delivered by request of the sender, under the conditions named above.

THOS. T. ECKERT, General Manager. NORVIN GREEN, President.

NUMBER	SENT BY	RECD BY	CHECK
34	Kw	ab	7paid [redacted] 2 bys 22

Received at ORANGE, N.J. 570 3/4 1887

Dated Boston 3/4

To Wm J Hanner

Orange NJ

Your apparatus will be in Orange Wednesday

Albert N Anderson

Paris

A. B. LAURENCE.

ELECTRIC PATENT COTTON LEATHER BELTING.

Representing The Underwood Mfg Co.

TELEPHONE CALL, 161 NASSAU.
TELEPHONE NO. 942 JOHN. 225 PEARL STREET, ~~32 JOHN ST.~~ & NO. 1A PLATT STREET.

New York, March 6th 1889.

Thos. A. Edison, Esq.,

"Paris Exposition,"

Orange, N. J.

Ans. 3/9/89

Dear Sir:--

Regarding the 18" belt which we are to furnish you for use at the Paris Exposition, would inquire over what size dynamo pulley it is to run, so that we may determine upon the best kind of belt to send you. Mr. F. H. Underwood the President of The Underwood Mfg. Co., who intends to be in Paris to superintend the putting on of the belts wishes to know if the length, i.e. 75 feet of 18" given in yours of 27th ult. is a very fair approximation of its length, as he wishes to send enough, and still does not wish to have a piece of a few feet cut off when it arrives in Paris. He also wishes to know if you are to send men from this country to put up the machinery in Paris, and if so, when they will leave here; and further, if there is any special rate that can be secured for an excursion ticket.

Awaiting your early reply, I remain,

Very truly yours,

A B Laurence

Polis

Paris Offices,
27 AVENUE DE LA BOURDONNAIS.
Cable Addresses,
NEW YORK, "UNIVERSAL."
PARIS, "USCOM."

UNITED STATES COMMISSION TO THE PARIS EXPOSITION OF 1889.
WILLIAM B. FRANKLIN, Commissioner-General.
SOMERVILLE P. TUCK, Assistant Commissioner-General.
WASHINGTON BUILDING, No. 1 BROADWAY, NEW YORK, N. Y.

New York, March 9, 1889.

Mr. Thomas A. Edison,

Orange, N. J.

Dear Sir:-

In reply to your inquiry of the 8th inst., the bill for trucking should be paid direct to C. J. Challar & Co., 160 Fulton St., New York. In this connection I would add that bills for trucking of previous Exposition goods have been sent to Messrs. Bergman & Co.; The Edison Lamp Co.; Edison Machine Works, Schnectady; and to the various points where the goods in each instance originated. Should these have been sent direct to you?

Yours truly,

Somerville P. Tuck

Asst. Com.-General.

Paris Offices,
27 AVENUE DE LA BOURDONNAIS.

Cable Addresses,
NEW YORK, "UNIVERSAL."
PARIS, "USCOM."

UNITED STATES COMMISSION TO THE PARIS EXPOSITION OF 1889.

WILLIAM B. FRANKLIN,
Commissioner-General.

SOMERVILLE P. TUCK,
Assistant Commissioner-General.

WASHINGTON BUILDING, No. 1 BROADWAY, NEW YORK, N. Y.

New York, March 9, 1889.

Mr. Thomas A. Edison,

Orange, N. J.

Dear Sir:--

Referring to yours of the 8th inst., case No. 270 went forward by the steamship "Germanic", which was an error in so far that the case has gone to Liverpool and not to Havre, and therefore Mr. Hammer if in Paris should look it up, and not expect to find it with other consignments of your goods through this Commission. This is the only case which has not been shipped through this Commission, and the purpose of our letter to you was that you might be advised where to look for this case, as you would probably hold this Commission responsible for its delivery.

Yours truly,

Somerville P. Tuck

Asst. Com.-General.

Rec

Form 59.

UNITED STATES COMMISSION
TO THE
PARIS UNIVERSAL EXPOSITION OF 1889.

WILLIAM B. FRANKLIN,
Commissioner-General.

SOMERVILLE P. TUCK,
Assistant Commissioner-General.

Washington Building, No. 1 Broadway, New York, N. Y.

RECEIPT.

NEW YORK, N. Y., March 16 1889.

Received of Pa. R.R. Co. (2)

packages containing articles for exhibition at the Paris Universal Exposition of 1889, at Paris.

From T. G. Edwin & Co. exhibitor, Orange N. J.

on which the following charges are due by the exhibitor above named.

Transportation .....

Terminal .....

Total .....

Exhibit No. 1464

Condition Good

For the Commissioner-General,

Somerville P. Tuck

Paris Exposition

Paris Office,
27 AVENUE DE LA BOURDONNAIS.
Cable Addresses,
NEW YORK, "UNIVERSAL."
PARIS, "USCOM."

UNITED STATES COMMISSION TO THE PARIS EXPOSITION OF 1889.
WILLIAM B. FRANKLIN, Commissioner-General.
SOMERVILLE P. TUCK, Assistant Commissioner-General.
WASHINGTON BUILDING, No. 1 BROADWAY, NEW YORK, N. Y.

Aug. 27/3/89

New York, March 23, 1889.

Mr. Thomas A. Edison,

Orange, New Jersey.

Dear Sir:--

Messrs. C. J. Challar & Co. have brought to our attention a statement of account of cartage on your exhibit, No. 144, which account is herewith enclosed for your inspection. It appears that these individual bills and receipts for each shipment have been forwarded in some instances to the Labratory, Orange, the Edison Machine Works, Schenectady, N. Y., the Edison Lamp Co., Harrison, N. J., to Messrs. Bergman & Co., and various other points where your cases of exhibits have originated.

Will you please see that this statement is put in the proper channel for the payment of the bill.

Yours truly,

Somerville P. Tuck

Asst. Com.-General.

Paris Exhibition

TELEGRAMS AND CABLES.
"PHONOGRAPH, LONDON"

TELEPHONE,
No. 3,200.

EDISON'S PHONOGRAPH CO.,

EDISON HOUSE "B," NORTHUMBERLAND AVENUE,

LONDON, W.C. 26th March, 1889.-

T.A.Edison Esqr,
Orange, New-Jersey, U.S.A.

Ans. 12 April, 89.

My Dear Sir:-

Referring to yours of March 5th allow me to correct the statement therein made, where you say:-

"I have considered your recent correspondence in regard
"to the expense connected with this exhibit, and still think that the whole of
"the expense attendant upon the exhibition of the Phonograph should be borne by
"yourself, but as you appear disinclined to concur in this view of the case I
"am willing to bear an equal share of the cost etc, etc,"

The correspondence to which you refer contained no proposal that I should pay the whole, nor any expression of opinion that you thought I should.- The only letter I received from you referring to this subject was that of date 11th January, from which I quote the only references thereto:-

"I have not made any accurate calculation as to the expense
"which will be incurred in connection with the Phonograph exhibit, but I assume
"that you will share this expense equally with myself.- I, of course, refer only
"to the Phonograph exhibit, the benefits to be derived from which will accrue in
"your interest as well as my own."-

To which I replied on January 25th as follows:-

"Your letter at present under reply proposes that I shall
"share equally with yourself the expense of exhibiting the Phonograph on that
"occasion, and you ask me for any suggestions I may have to make in connection
"with this proposed exhibition.- I have no objection to sharing expenses directly
"attendant upon this exhibition of the Phonograph, and presume you will consider
"it to your advantage as I do to my own, that in that case, I should have control
"of that expenditure, etc, etc"

From this you will see that I at once acquiesced in the only suggestion you made to me, and which I considered a perfectly reasonable one.- The only reservation which I made, and which you subsequently confirmed, was, that while the exhibition of the Phonograph so far as it concerned the Exposition should take

place in your exhibit, and under the charge of Mr Hammer, yet he was to receive his instructions from me as to the details and general policy of that exhibition.- I shall, of course, not want to occupy myself with the details, and shall probably only find it necessary to indicate to Mr Hammer my general lines of policy, and leave to him the carrying of it out.-

As it is desirable to have the Phonograph exhibited in circumstances of absolute quiet, and with every convenience and comfort, I am of opinion that that the noise of your exhibits would be very prejudicial to it in this respect.- In this Mr Hammer agrees with me, and I purpose providing for this - and indeed have already taken steps to that end - by either finding or erecting some suitable place at a distance from the general Exhibition.- This, of course, will entail further heavy expenses, which I expect to be covered by a small charge of admission to the general public, and complimentary tickets can be issued to the nobility and other people of importance, who may desire to see it more thoroughly.- I quite understand that you shall not participate in the expense of this part of the exhibition, for which I take the risk myself, and any profits, if there be such which I do not anticipate will be the case, when all things are considered.-

Yours sincerely

G.E.Gouraud.

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This is an UNREPEATED MESSAGE, and is delivered by request of the sender, under the conditions named above.

THOS. T. ECKERT, General Manager. NORVIN GREEN, President.

NUMBER	SENT BY	REC'D BY	CHECK
24	W	ab	59 Collect Lee

Received at ORANGE, N. J. 1455 April 1887

Dated London Via New York 1

To Thomas A Edison Orange NJ

Very important know reliable date and number next shipment if not immediate Cable Hammer send six from paris returnable if necessary am liable heavy damages failure exhibition Contracts based on dates promised given besides paying big rent lecture Hall which

Form No. 1.

THE WESTERN UNION TELEGRAPH COMPANY.

This Company TRANSMITS and DELIVERS messages only on conditions limiting its liability, which have been assented to by the sender of the following message. Errors can be guarded against only by repeating a message back to the sending station for comparison, and the company will not hold itself liable for errors or delays in transmission or delivery of Unrepeated Messages, beyond the amount of tolls paid thereon, nor in any case where the claim is not presented in writing within sixty days after sending the message.

This is an UNREPEATED MESSAGE, and is delivered by request of the sender, under the conditions named above.

THOS. T. ECKERT, General Manager. NORVIN GREEN, President.

NUMBER	SENT BY	REC'D BY	CHECK

Received at ORANGE, N. J. 188

Dated

To

Cant utilize 52 lectures booked April graphs very active but losing ground daily reply fully promptly

Pony

THOMAS A. EDISON, PRESIDENT.

FRANCIS R. UPTON, GEN'L MG'R AND TREAS.

EDISON LAMP CO.,

Harrison, N. J., April 3rd, 1889

Ans. 8/4/89

A. O. Tate, Esq., Private Secretary,

Laboratory of T.A.Edison,

Orenge, N.J.

Dear Sir:-

I enclose letter from Mr. Hammer which you will kindly return to me. Mr. Hammer is instructed to report regularly and fully to me. His address at present is, care of the Edison Co. Paris. You will note that he will obtain a telegraphic address which he will send to me by next mail. I will have any letters I receive from him forwarded for your perusal. I desire that you call Mr. Edison's attention to the letter enclosed.

Yours truly,

Francis R. Upton

Treasurer.

Thomas A. Edison,

"Paris Exposition"

Address all communications to
Thomas A. Edison, "Paris Exposition,"
Orange, N. J.

April 6th 1889

My Dear Mr Edison.

I received your cablegram requesting me not to exhibit the Phonograph in Paris prior to Col Gouraud's lecture & also the one requesting me to deliver two phonographs to him & lend him assistance in his Mucendon lecture, I wish to say in regard to the former dispatch that Col Gouraud need not have asked you thus to instruct me for the following reasons 1st I had expressly promised him I would not. 2nd I had loaned him the only machine I had as the others are not as yet here although they will be at once except the Spectacles which Mr Batchelor has not yet sent, In view of the foregoing I let him have the only machine I had, loaned him the "original Phonograph" from the South Kensington Museum, loaned him my lecture manuscript & did everything in my power to assist him, I think it was inconsiderate of him to cable you to thus instruct me as you might imagine I was not co-operating

Thomas A. Edison,

"Paris Exposition"

Address all communications to
Thomas A. Edison, "Paris Exposition,"
Orange, N. J.

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3/ ting with him in every way possible which I believe to be your wish.

I think it highly important that I should let you know Col Gouraud's ideas about the Phonograph Dept in the Exposition which I think hardly accord with your views & certainly do not with mine &I might say here that having given considerable attention to the subject & having upon the ground thoroughly discussed the matter with both Col Gouraud & yourself, I believe my judgment in this matter better than his & trust that you will cable me definite instructions about this dept at once as I must either act as my judgment dictates or leave the responsibility of the result with Col Gouraud.

As I understand Col Gouraud he wishes to make no show of the Phonographs in the Exposition as refered to in the enclosed letter thus making it incumbent upon the general public who wish to see the phonograph

Thomas A. Edison,

"Paris Exposition"

Address all communications to
Thomas A. Edison, "Paris Exposition,"
Orange, N. J.

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3) to visit the special building outside & pay for the privilege, I have told him I thought the idea of making a show outside & charging admission an excellent scheme but I most emphatically do not believe it wise to subordinate the Exhibit here to it, as it is far too important a factor the 22 million visitors who will come here will be much disappointed if they cannot see there the Phonograph in the Exposition everyone is expecting it, and as you are doubtless well aware you may secure the Volta Prize here & various gold medals & taking out the Phonograph might lose for the Power & I feel sure the gold medal for the Phonograph, I appreciate the fact that Col Gouraud wishes to save the expense necessary in fitting up the Phonograph Exhibit with the necessary partition to exclude the noise of the machinery & the appropriate furnishing & decorating of the Phonograph space

Thomas A. Edison,

"Paris Exposition"

Address all communications to
Thomas A. Edison, "Paris Exposition,"
Orange, N. J.

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will amount to four or five thousand dollars half of which he is to pay. Half your self will pay. But you can realize that the receipts of the outside exhibit should reimburse you both for this outlay & the 50,000 francs of the "Volk Prize" which many feel sure you will get might warrant such an outlay, remember the Phonograph Dept. fronts the main aisle (35 ft wide) & occupies 1/2 the U. S. frontage it is the frontage of the entire Edison Exhibit should be properly filled up. An enclosed building is essential as we are in the Machinery Halle by using double fronting & glass I can secure the needed quiet, We certainly could not in the entire Expo. have a better situation for the Edison Display & the disadvantage if any I can overcome, I want you to appreciate my position. it is this, I have acted in regard to the entire Exhibits here according to my judgment base in regard to the Phonograph, &

Thomas A. Edison,

"Paris Exposition"

Address all communications to
Thomas A. Edison, "Paris Exposition,"
Orange, N. J.

.....188

5/ This matter I am somewhat in a quandary. I know you wish me to consult Col Gouraud in this matter because of his interests here. Because he assumes half the expense. His ideas about the Expo are so at variance with mine that I wish you either to instruct me at once by cable to go ahead (only so far as the Expo is concerned) as my judgment seems best consulting of course as far as possible Col Gouraud, If you this cable I shall feel warranted in expending in this connection for a Pavilion Enclosure furnishings (Gas) &c &c for Summer & Autumn not exceeding five thousand dollars & making it as much less as I possibly can, I must know at once as the building should already be under way, Remember I shall meet Col Gouraud in every possible manner but I must know your wishes in the above matter, Kindly cable me under the Address which I have registered I. E.

Thomas A. Edison,

"Paris Exposition"

Address all communications to
"Thomas A. Edison, "Paris Exposition,"
Orange, N. J.

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6/

"Newark" which was the only one they would accept out of a dozen tendered which were already taken.

I will write you particulars of the Expo, later, it will be by far the most "gigantic" thing of the kind ever held there are 35,000 Exhibitors & I may add our dept is in a further state of advancement than any not only in the American Section but also in the Machinery Palace if not in the whole Expo; the boys are working like beavers Awaiting your instructions

I remain

Yours very sincerely.

W. J. Hammer

P.S. The Graphophone interests will make quite a display which we must of course "touch it."

[ENCLOSURE]

Pour -

Telegrams and Cables
"PHONOGRAPH, LONDON."

Telephone,
No. 3,200.

EDISON'S PHONOGRAPH CO.,

EDISON HOUSE "B," NORTHUMBERLAND AVENUE,

LONDON, W.C. 2nd April, 1889.

W. J. Hammer Esqr,
Grand Hotel,
Paris.

Dear Sir:-

Thanks for your prompt and favorable reply to my telegram.- In telegraphing again you need only use "Phonograph London" or if cabling me Sunday, "Gouraud Norwood".

I suppose by what you say about arranging for a Phonograph Temple in the Exhibition, that you mean you have got consent to make a charge for hearing the Phonograph somewhere within the Exhibition grounds. Is this so? Otherwise I am of the opinion, in which you seem to coincide with me, that it would be better to have the work of the Phonograph - lectures, loud & low records etc - for the general public, at some other place than in the exhibition itself, because we would thereby not only reduce, but indeed entirely eliminate the question of expenses for Mr Edison and myself to bear, as regards the Phonograph exhibition, and would besides have a large surplus to the balance, in which latter I should be happy to give you a substantial interest for your personal supervision of it, if you would undertake it.-

I have been told that the rules laid down prohibit any charge for any purpose within the Exhibition grounds proper, but whether that be so or not, if you make a strong representation of the case to the Authorities they will no doubt grant you the exhibition rather than have such an attraction as that taken away from the Exhibition grounds; so I am sure, unless you have already done so, it will only be necessary for you to take a strong stand of either having it in the Exhibition with the right to charge for admission, or have it outside where we would be perfectly free. You will of course make it clear that there will be Phonographs in the Edison exhibit, and one Phonograph, as we agreed, should there be available to distinguished persons, and the public interest is so great in this question, and they are so ready to

[ENCLOSURE]

pay for the privilege of hearing it in proper circumstances, that it would be sheer folly for us to add any expenses in that connection; especially so in my case personally, as for my purposes it is not necessary for me to pay out any money beyond the very large expenses already incurred in bringing the thing before the public as I have. All I want now is Phonographs.- A cable just received from Mr Edison tells me that he will positively ship me by express on the 10th of this month ten complete machines.- I cabled him that unless the machines were on the way, I was to have over from Paris some of those you have, which could be returned in time for the opening of the Exhibition, if necessary.

Have you received any machines yet, and if so, are they complete as regards spectacles? I am afraid not. If they are, I think it would be well for you to send over three or four for use here during the next 6 weeks, and I will of course have them back in Paris in time for the opening of the Exhibition, the importance for which I fully realise as regards having the Phonographs in full force on that occasion.-

My present intention is to go over to Paris early next week, when I can settle with you everything regarding the Phonograph Temple etc.

I have several men here speaking together all the languages of Europe and Asia, who are practising with the Phonographs, without any expense, and who will be available for you in Paris when required. With half-a-dozen more Phonographs I could also, without expense, increase the number.

Yours sincerely.

G.R.Gouraud.

SPOKEN INTO EDISON'S PHONOGRAPH
BY COLONEL GOURAUD
WRITTEN FROM THE PHONOGRAPH'S DICTATION
BY...R.Price.....

Pa. 13

New York, April 16th 89

T. A. Edison Esq.
Orange N.J.

Dear Sir,

Enclosed please find Circular &c. of the Official Catalogues authorized by the French Government at the Grand Exhibition of '89. For this Catalogue I ask the favor of your adv.; any cuts you may desire to show will be placed in the adv. to great advantage. Should you wish Dr. Cross to call upon you or your representative at Orange, I shall be pleased to attend to your wishes in this respect at any time you may appoint.

A Catalogue of the natural world
Scarcely be Complete without the
name of "Edison" prominently
Shown. Thanking the favour of a
Reply, I am
Yours Obt
A D Rumble
Agent
c/o Messrs Armstrong
Whitworth
822 Broadway

[ENCLOSURE]

Paris

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THE

Universal Exhibition, Paris, 1889,

UNDER THE CONTROL OF THE FRENCH GOVERNMENT.

SADI-CARNOT, President of the Republic.

EDITOR L. DANEL, PARIS AND LILLE, FRANCE.

Sole Agents: BERGER & Cie

60 BOULEVARD HAUSSMANN, PARIS.

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ALFRED MORI, } REPRESENTATIVES FOR THE UNITED STATES.
H. FITZ-HATTON, }

AT NEW YORK, 680 BROADWAY.

TURN OVER.

[ENCLOSURE]

PARIS UNIVERSAL EXHIBITION, 1889.

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" 49. Implements and Processes used in the Cultivation of Fields and Forests.
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Paris Universal Exhibition, 1889.

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[ENCLOSURE]

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Messrs. MORI & FITZ-HATTON will be pleased to give Exhibitors any information of whatever nature they may require respecting the Exhibition, and to receive their communications at this address: 680 Broadway, N. Y.

THE

Universal Exhibition, Paris, 1889.

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OF THE

OFFICIAL CATALOGUE.

EDITOR

L. DANEL, LILLE,

FRANCE.

SOLE AGENTS:

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50 BOULEVARD HAUSSMANN,

PARIS.

REPRESENTATIVES:

Alfred Mori and H. Fitz-Hatton,

FOR

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822 & 824 Broadway, New York.

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NEW YORK.

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Rubans.
Soies.
Tapis.
Toiles Cirées.
Toile d'Irlande et d'Ecosse.
Toiles Écrues.
AB 600

Top 3rd Page.

Bottom 3rd Page.

[ENCLOSURE]

PARIS UNIVERSAL INTERNATIONAL EXHIBITION

1889

GENERAL OFFICIAL CATALOGUE

L. DANEL, Official Printer & Publisher. — LILLE

L. BERGER & Cᵉ, SOLE CONTRACTORS FOR ADVERTISEMENTS.
60, Boulevard Haussmann, PARIS

ADVERTISEMENT ORDER FORM

Please reserve in the " PARIS EXHIBITION OFFICIAL CATALOGUE *"*
_____ page for insertion of _____ advertisement to appear in the volume of Groupe _____ and in all sections and editions of same, for the sum of
£ _____ *which* _____ *agree to pay on presentation of proof of the advertisement.*

N. B. — All Payments are to be made to the order of Messrs J. MUNROE & Cᵒ, Bankers for account & to the credit of Messrs L. BERGER & Cᵒ, sole Contractors for advertisements in the *General official Catalogue.*

DATE _____ SIGNATURE _____

ADDRESS _____

ARMSTRONG, KNAUER & CO.
(Authorized Agents),
522 & 524 Broadway, New York.

This is the only Official Catalogue published by the Administration, and the only one that can be sold all over the Exhibition and Grounds.

PRICE OF ADVERTISEMENTS

1 page	$ 200
1/2 page	125
1/4 page	75

P. T. O.

Pres

THOMAS A. EDISON, PRESIDENT.

FRANCIS R. UPTON, GEN'L M'G'R AND TREAS.

EDISON LAMP CO.,

Harrison, N. J., April 17th, 188 9

Thomas A. Edison, Esq.,

Laboratory,

O r a n g e , N. J.

Dear Sir:-

The following is a quotation from letter received us from Mr. Hammer:-

"Please ask Mr. Edison whether the artist who was painting "the oil portrait of him has the same finished, if so it "should be sent off at once. We certainly should have a "good picture of Mr. Edison here".

Yours very truly,

EDISON LAMP CO.

By Francis R. Upton

Treasurer.

Paris

Form 38.

UNITED STATES COMMISSION
TO THE
PARIS UNIVERSAL EXPOSITION OF 1889.

WILLIAM B. FRANKLIN,
Commissioner-General.

SOMERVILLE P. TUCK,
Assistant Commissioner-General.

Washington Building, No. 1 Broadway, New York, N. Y.

RECEIPT.

NEW YORK, N. Y., April 20, 1880.

Received at Pier 42 N.R. One (1)
packages containing articles for exhibition at the Paris Universal Exposition of 1889, at Paris.

From Thos A Edison exhibitor, Orange N.J.

on which the following charges are due by the exhibitor above named.

Transportation ——

Terminal ——

Total ——

Exhibit No. 144

Condition Good

For the Commissioner-General,

Haughwout & Howe

Pour

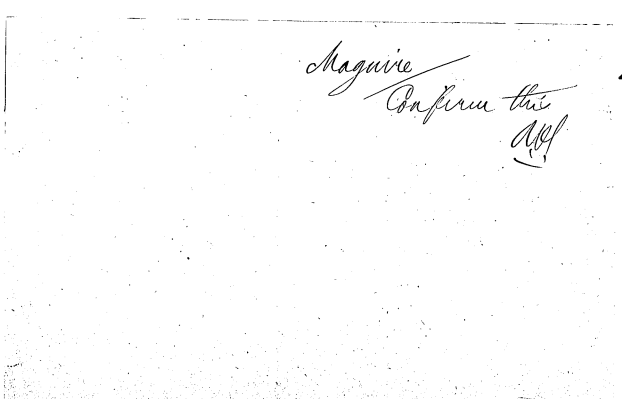
T. A. Edison
Orange

New York
April 22nd

Paris, Edison New York: I
understand, ship
exhibition spectacles and
wax cylinders.

Kaufman

Read at Friday
April 23rd
8:48 A.M.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Confirm this
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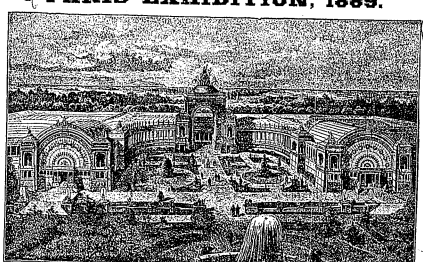
Paris
a b

PARIS EXHIBITION, 1889.



Armstrong & Knauer,
EXHIBITORS AGENTS, Authorized Agents for the Official Catalogue of the Paris Exposition

822 & 824 BROADWAY

New York, U. S. A. April 23d 1889

A. D. Gale Esq.
with T. A. Edison Esq.
Orange N. J.

Dear Sir,

I had the pleasure a few days ago, when I forwarded Circulars &c. relating to the only official Catalogue of the Paris Exposition of 1889, since that date without reply, of procuring the large undertaking of your next exhibit at Paris kindly requested an early answer to my request for the insertion of your advertisement for that Catalogue.

This reading to say, that no amount of private Circulars that may be distributed by exhibitors, can begin to compare with the

importance of a Government Catalogue at such
an Exhibition as that of '89. The Advertisements
to be solicited only from Firms & Companies who
are well known, not to make them known
only, but to show to the world the record of
those who so make famous our U.S. of America.

I will deem it an especial honor, if
allowed to call upon you, if desired, to receive
the adv.ts of such a gentleman as J. A. Greenley Esq.

Awaiting your early
pleasure,

I have the honor to remain
Yours truly

A. Thrall

Soliciting agent for
ARMSTRONG, ENAMEL & CO.
822 and 824 Broadway,
New York City.

Paris

THOMAS A. EDISON, PRESIDENT.

FRANCIS R. UPTON, GEN'L MG'R AND TREAS.

EDISON LAMP CO.,

Harrison, N. J., May 3rd, 188 9

A. O. Tate, Esq., Private Secretary,

Laboratory,

Orange, N.J.

Dear Sir:-

Your letter of May 2nd enclosing letter from Armstrong Knauer & Co. Regarding advertising in the catalogue of the Paris Exposition, we have forwarded your letter and letter of A, K & Co. to Mr. Hemmer. We think that if Mr. Edison advertises it should be simply giving the address of the New York Company and the advertisement should be in the name of the New York Company, or of Mr. Dyer as agent for the sale of American apparatus. We enclose copy of our letter to A.K & Co.

Yours very truly,

EDISON LAMP CO.

By Francis R. Upton

Treasurer.

[ENCLOSURE]

Rec'd.

Harrison, N.J. May 3rd, 1889.

Armstrong, Knauer & Co.,

822 & 824 Broadway, New York City.

Dear Sirs:-

Mr. Tate has referred your letter of April 29th to us regarding advertising in the Official Catalogue for the Paris Exposition. Mr. Edison personally considers that his exhibition is a scientific one representing his life work. As it is of such varied character and representing so many companies, he does not think that he personally can advertise. Mr. Edison's agent for Europe is Mr. P. S. Dyer, 43 Rue Osy, Antwerp, Belgium. Mr. Dyer may see fit to give you a page advertisement rather than have the Official Catalogue go without proper notice.

Yours very truly,

EDISON LAMP CO.

By

Treasurer.

Paris

TELEGRAMS AND CABLES,
"PHONOGRAPH, LONDON."

TELEPHONE,
No. 3,200.

EDISON'S PHONOGRAPH CO.,
EDISON HOUSE "B," NORTHUMBERLAND AVENUE,
LONDON,
W.C.

4th May 1889.

Ans June 1/89

My dear Edison,

As regards your letter of 20th April, the apparent discrepancy between the paragraph you quote to Mr Hammer, of 2nd April and that which you quote from my letter to yourself of 26th March, is explained as follows:- My arrangement with you as to ~~xxxxxxxxxxx~~ a division of the expenses of the Paris exhibit of the Phonograph was perfectly well known to Mr Hammer, because I read to him in this office the entire correspondence between yourself and myself on that point. The large surplus suggested in my letter to Mr Hammer - ~~as~~ which I proposed to give him "substantial interest" for his personal supervision - referred solely to the probable surplus of receipts over expenses that would result directly and exclusively from the proposed lectures and exhibitions, all of which I had in mind as keeping entirely separate from the general expenses incidental to the exhibition at the Exposition, or any other expenses connected with the introduction of the Phonograph in Paris. I referred to it in the specific way I did, so that Mr Hammer would understand that if that course were adopted, and he could give it his personal supervision and without prejudice to his other duties at the Exposition the "substantial interest" referred to would be from the net receipts of that of which he should have charge, and for which "personal supervision" I would obviously have to pay somebody else. The opinion expressed in my letter to Mr Hammer that there would be a large surplus from this, I certainly meant, and believed would be the case considered only from the point of view that against the receipts from such an exhibition of the Phonograph there would be charged to it only the expenses directly pertaining ~~to it~~

-ing to it, and the words in the same paragraph "entirely eliminate the question of expenses from Mr Edison and myself" meant exactly what it says, that if that plan were adopted I should have out of the same receipts first paid the expenses - not only mine, but yours - which might be incurred from the exhibition of the Phonograph, in the Exposition, and in my conversation with Mr Hammer before he left London for Paris and before I wrote the letter in question, I made it perfectly clear to him that the suggestion of the lectures and exhibition outside should not necessarily be to the total exclusion of the exhibition of the Phonograph inside, in your general exhibit as I already agreed with you should be the case. The apparent conflict in my intentions upon this point is suggested by the words you underline in my letter to Mr Hammer, but the words you underline in my letter to yourself is explained by my having on the 26th March written to you under the idea that as I should take the risk of this exhibit I should take any profits that might result therefrom.

I had on the 2nd April come to the conclusion that although I took the risk of the outside lectures and exhibitions, if profits should result therefrom, it would be only fair to apply these profits first to the reduction, or total elimination of our share of the expenses of the Phonograph exhibit inside the Exposition, and before counting anything as profits to myself in the outside exhibition, the whole of the expenses - your share and mine - inside the Exposition, should first be cancelled. I hope you will see that this is a perfectly straightforward explanation, and the apparent descrepancy is on the face of it, if you will think of it, utterly inconceivable, unless I have lost all sense of honor, and common sense as well, of having written you something with the intention to deceive, almost at the same time of my writing your confidential representative in Paris, with a perfect knowledge

that anything I wrote to him must be the same as writing anything to yourself. Still wishing to take no undue offence, and being far from angry with you, I not only do not blame you for asking my explanation in this connection, but I am grateful to you for enabling me at once to correct a wrong impression, under which I should be very sorry to rest, and must have rested in ignorance had you not informed me as you have.

However you may have understood my intentions with regard to the outside exhibition of the Phonograph, or even of its exhibition within the Exposition, because although you did not mention it , I did contem-plate - and may have written the same to Mr Hammer - that arrangements might be made within the Exposition limits for an exhibition of the Phonograph, and lectures upon it to be paid for, in ignorance of the fact that no payments were to be allowed of any kind whatever within the Exposition grounds. It was equally my intention - and only my inten-tion in connection with the proposed exhibit outside - to have it done by competent lecturers in various languages, and this I still think should be done in Paris, notwithstanding your opinion to the con-trary, but of course I do not insist on this against your wishes.

I cannot refrain from one general observation in connection with your extreme sensitiveness upon this subject of exhibitions of the Phono-graph as I proposed, with all the dignity that comes of lectures upon the scientific principles, as well as exhibitions of the practical uses and demonstrations of the same, that on the occasion of the intro-duction into Europe of your first Phonograph, which occured by singul-ar coincidence at the time of the previous International Exposition in Paris, that the Phonograph throughout that Exhibition was open to the public all day long, and all the evening, for ~~free~~ I, free admission/

only to hear a few words, and discordant metallic tones in reproductio
of a Cornet. I am told that as much as 160,000 Francs profit was made
on that exhibition, and I suppose, or rather had supposed, that it was
done with your knowledge and approval. Indeed upon this whole question
I have been more sensitive than I had reason for supposing you were
yourself. I mention this not to alter your present views, but to make
as clear as possible to you the whole subject as it presents itself
to me.

I am reminded by all this correspondence of a remark that Mr
Hammer made to me while here to the effect - in answer to my enquiries
re the Gilliland, Tomlinson episode, in connection with which other
names of old associates of yours were mentioned with doubt and suspici
- that you had said you did not know who you could trust any longer,
and this I fancy affords a large measure of both explanation and excus
for the state of mind under which both your letters of 12th, and 20th
April were written. You have my sincerest sympathies for the rude
shock you have received in the connection referred to, and I beg you to
put your mind at ease and not anticipate an extension of the experien-
-ces in question, so as to include myself. If no other motives or
principles existed for your protection in my case I can only assure
you that the value I attach to my long and intimate association and
identification with you, and my respect and affection for you will of
themselves constitute all the security you will ever need, and in say-
-ing good bye to you at this time I will beg you to do in the future
as you have done in this case, so far as promptly asking for any expla
-nation

-nation which in circumstances of either fact, rumour or fear , and any desire on your part as to what I should do where your name and your fortunes alike - so far as the Phonograph is concerned - are in--volved, I should like you always to write me and only spare me con--demnation, criticism, suspicion, or even doubt upon any point whatever without first hearing what I have to say, and I shall rely upon one principal, which Im have invariably done in the past, and will equally continue to do in the future viz:- not only to carry out completely and entirely the letter, but as well the spirit of my agreement with you and even more than this viz:- to consult alike your preferences and your prejudices to the utmost of my power, even where they might ex--tend beyond my obligations, and duties to you, and even my rights.

Yours faithfully.

G. E. GOURAUD.

P.S. You telegram and letter expressing xxxxxxx a desire to pay the whole of the Paris expenses in order to control the exhibit, are re--ceived. You have no doubt instructed Mr Hammer accordingly, as I have also. I raise no objection whatever, since you prefer it, but I am bou to say that such a course was not necessary in order to secure what you desired.

Mr Hammer will no doubt explain to you that I succeeded in obtain--ing for the Phonograph a suitable place at the very front door of the American Industrial section, a pavilion in which the Phonograph can be placed for the use of special people to whom it will be desired to show it under the best of circumstances, and also where it may be done in

in a separate compartment, to the general public, if it is found im-
-possible to exhibit it properly in the Machinery Gallery. That it
will be impossible to exhibit it without possible ruin to it in that
place I have no doubt whatever - an opinion shared by everyone connec-
-ted with the Exposition. It is a glass house of enormous size, full
of enormous machinery, which will be constantly in motion, with an
elevated railway overhead, and all kinds of machinery in motion in close
proximity, and I have no hesitation in saying that the Phonograph from
a business point of view, would be ruined if it had been left to be
exhibited in that place only. Everyone I met who knew it was to be
exhibited there expressed surprise that it should be so. Mr Hammer
equally felt that a better position for the Phonograph should be found
in the American Industrial section, but his request for space was
refused unless he surrendered an equal amount of space at the general
exhibit. This difficulty I overcame through the intervention of Berger
and no doubt Mr Hammer - who was as anxious to get this consession
as I was - will inform you correctly as to the facts of the case, and
not allow you to reproach me in the future for trying to influence
him, or taking steps for getting space elsewhere than with your general
exhibit, and thus going against your wishes in the matter. Phonographs
will be in the general Edison exhibit also, so that the exhibition of
your inventions will be complete, though the Phonographs will be only
shown in operation there to the extent to which Mr Hammer's judgement
deems desirable. But in order not to ~~think~~ above the Phonograph exhibit -
to whatever extent it may be carried on in the Industrial section -
detract from the importance or attractiveness of the Edison exhibit as
a whole; no one will be allowed to see the Phonograph in operation
in the Industrial section without first going to the Edison exhibit
and there obtaining a ticket of admission.

and there obtaining a ticket of admission to the Industrial section, without payment of course.

The place I secured in the Industrial section had been reserevd for the Graphophone. It is a perfectly quiet place, and being right at the main entrance from the Passage of Nations to the American In--dustrial section, and in the midst of the Electrical section, the Graphophone would have had a prominence and importance given to it by that position most objectionable. It is in consequence of my arrange--ments relegated to an inferior position, such as it deserves.

I sincerely trust that you will agree with all your friends upon this point, and appreciate the services I have done in overcoming obstacles which Mr Hammer - with all his ability - was unable to cope with, and which took me nearly all my time every day for 10 days to accomplish.

Paris

EDISON LAMP CO.,

Harrison, N. J., May 6th, 1889

Ans. May 24/89

Thomas A. Edison, Esq.,
Laboratory,
Orange, N.J.

Dear Sir:-

We send an extract from letter of Mr. Hammer dated Apr. 26th, a memorandum of material wanted at once from the Laboratory. as follows:-

Dickson's Photographs;
Autograph Telegraph;
Direct Current Transformer;
Multopolar Dynamo (new);
Special Cylinder Records, especially Mr. Edison's talking,
Megaphone Tubes.

Chief Mr. Bernard Edison

Yours very truly,

EDISON LAMP CO.

By J.C. Melick

Paris

EDISON LAMP CO.,

Harrison, N. J., May 11th, /88

Thomas A. Edison, Esq.,

Orange, N.J.

May 16/88

Dear Sir:-

Enclosed is letter which we received from Mr. Hammer dated Paris Apr. 30th, also copy of our answer to same. Kindly verify the part in our letter that refers to our telephonic conversation this morning.

Yours very truly,

EDISON LAMP CO.

By Francis R. Upton

Treasurer.

[ENCLOSURE]

May 11th, 9

William J. Hammer, Esq.,

Paris, France.

Dear Sir:-

Your letter of April 30th to hand. I have reported to Mr. Edison the fact of your successful and rapid progress you have made.

Regarding your arrangements with the French Edison Company, as mentioned in my letter of May 6th, any arrangements that you make with the French Edison Co. will of course be subject to the approval of Mr. Dyer. So far as I know there is no reason why the arrangements proposed is not thoroughly a proper one. I have just communicated with Mr. Edison by telephone and he says, he sees no objection to your letting the French Co. have the use of two phonographs, provided there is no charge for admission made by the French Company. He also directs that whatever is done should be absolutely under your direction.

Regarding the signs the French Edison Co. wish to put up, and having a man to represent them in your space, this is something that you should have Mr. Dyer's approval of, as he is more directly concerned. Considering the relations that exist between the Edison Co. and this company, I see no reason why Mr Dyer should not approve of having the French Co's name appear on signs such as you mention. Yours very truly,

Treas.

Paris

Paris Office,
27 AVENUE DE LA BOURDONNAIS.
Cable Addresses,
NEW YORK, "UNIVERSAL."
PARIS, "USCOM."

UNITED STATES COMMISSION TO THE PARIS EXPOSITION OF 1889.

WILLIAM B. FRANKLIN,
Commissioner-General.

SOMERVILLE P. TUCK,
Assistant Commissioner-General.

WASHINGTON BUILDING, No. 1 BROADWAY, NEW YORK, N. Y.

New York, May 15, 1889.

Mr. Thomas A. Edison,

Orange, New Jersey.

Dear Sir:-

I beg to call your attention to a bill rendered you on April 19th for $38.00, extra loading charges on heavy cases of your exhibit by the Chapman Derrick & Wrecking Co. I would respectfully request your early attention to a settlement of this account that I may be able to close the business of this office.

If you do not understand this charge, ~~to~~ further explain it to you, I would request that you send a check to the order of Haughwout Howe, United States Despatch Agent,

Yours truly,

By direction of the Commissioner-General,

Haughwout Howe

U. S. Despatch Agent.

Paris

EDISON LAMP CO.,

Harrison, N. J., May 28th, 1889

Thomas A. Edison,

Orange, N.J.

Ans June 4/89

Dear Sir:-

Enclosed is copy of letter received from W. J. Hammer regarding the opening of the Exposition at Paris.

Yours truly,

EDISON LAMP CO.

By Francis R Upton
Pres.

Treasurer.

La Champagne 25 & 4

[ENCLOSURE]

Paris, May 13th, 1889.

Francis R. Upton, Esq.,

Treas. & Gen'l Manager, Edison Lamp Co.,

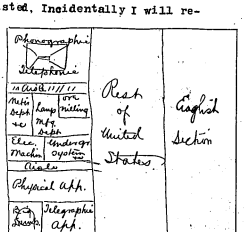
Harrison, N.J.

Dear Sir:-

The Exposition has been opened a week and is an assured success. On the day of the opening (last Monday) we were in better shape than any exhibit in the Machinery Palace, and the only place the President Carnot and his party stopped in the building was in front of the Edison Department to examine the "Big Lamp", Edison's bust and picture, and we had two phonographs with loud records one singing the "marsellais" and "America" and the other shouting "Vive Carnot", Vive la France", Viva la Republique", about 250,000 people attended and the illuminations were the finest the world ever saw, the illustrated papers which you will receive will give you an excellent idea of the opening ceremonies. I regret very much the delay in sending me the spectacles and recorders and reproducers as a tremendous interest is manifested in the Edison Phonograph and I have only one machine to show. I must either have the new one and new wax or the old one and old wax. I ha ve cabled a number of times for the parts required but have as yet received nothing. After rushing the Phonograph building and department in the Machinery Palace and the Special Phonograph Temple in the U. S. Industrial Section with all possible speed, it is too bad I have no more machines to show. The building in the

[ENCLOSURE]

Machinery Palace is intended for the reception of distinguished people for taking piano records and records from eminent sololats who come to the Exposition. It will be fitted up handsomely but cheaply being made of rough boards, in fact it is one building inside of another and the intervening space filled with sawdust to keep out sound and make it cool, this rough boarding covered with cloth makes a fine Edison headquarters, I have placed one half of Holzer's case on each side of the entrance and filled the left with historical telephonic experimental apparatus and the right with the Phonographic Apparatus, the walls are covered with the phonographic and telegraphic diagram, Outcault made and the electric whole will be surmounted with some novel effect while about the building will be the tables containing telephonic and phonographic apparatus & c. I will send you a sketch of the present arrangement of our space in the machinery hall and now enclose a very rough sketch which will show a few changes from the plans I made in America which I was compelled to make by the conditions as they here existed. Incidentally I will remark that the U. S. Commissioner have been more bother than assistance to us here and the complaints of their inefficiency and lack of attention are general, however, they did not get away with us, though they have tried to cut up our space and take some of it away on various occasions. I have



[ENCLOSURE]

held on to all I had and secured more in the Industrial section. We have nearer 9000 feet than 8000 now to constitute the largest and most important exhibit in the show, ther is certainly not one attracts the general attention it does and we are not through by any means although far ahead of most of the exhibits, the Phonograph Temple in the Industrial Dept. is L shaped and is arranged as best we could do with the space we secured, it combines CoL. Gouraud's Hamilton's and my ideas, and will I believe give entire satisfaction. The parties who wish to hear the Phonograph under its best conditions or who wish to hear it in their own tongue must secure a card with Edison's Phonograph, (by which we can regulate the crowd and at the same time cause the people in our Industrial Sections to visit the more elaborate Depts. in the Machinery Hall. The doors will eb removed in the day time and be replaced by curtains over each entrance is an American Shield with the American and other national flags, each operated works two phonographs, each section will contain ten to twenty people at a time, the section nearest the main facade of the Gallery of Nations is occupied by the American & English Phonograph with American & English Flags over the door, next comes the American and French flags, next the American & Russian, American & Spanish, and there are departments for Italian, Norwegian, Swedish, Chinese, Japanese &c. the building is made principally of glass upon which will be inscriptions in each language and over the cornace will be inscriptions of Edison's Phonograph, stairs lead to the roof which is railed in and carries a handsome piano for making records and

[ENCLOSURE]

and here will be placed the loud speaking telephone which will be connected with the other section in Machinery Hall, opposite our side entrance is the show of the "Taintor Graphophone" as it is called (Bell is not in it) their man told me they were "making hay while the sun shone" as people would not notice them much when we were started. I'll knock them out but send me machines and send all I asked for, for I need them and I have great hopes of catching that great special prize of 100,000 francs for the best thing in the Exposition, either and invention or an exhibit. I am using every effort to get it on both the entire exhibit and the complete manner of handling and showing the phonograph together with its great intrinsic merit. You will find the largest crowd in the Machinery Hall about our exhibits and just wait a little, the American and English exhibitors held a meeting last week and decided almost unanimously to cover up and close their exhibits on Sunday, and when I walked through the entire English & American Departments yesterday (the 1st Sunday) I saw only two American and two English firms transacting business or open out of the hundreds and hundreds of exhibitors, and these were I think all the french representatives, the U. S. authorities will not furnish steam, and the State Dept. wrote from Washington to the U. S. Com. to support all steps taken for a proper observance of the American Sabbath. I do not believe in Sunday working either as a matter of principle or policy, and my men having to be "on deck" day and night will need the one day rest or they will be physically unable to do their work and with our elaborate departments it will be one con(4)

[ENCLOSURE]

continuous "hustle", and I have a good band of hustlers, no man could ask more than they have done. I may in this connection state that the "Paris Exposition of '78, the Vienna Expo. and the Expo. last year in Brussells, all saw the American & English sections covered on Sunday. Before I close I wish to say, that I have communicated for sometime with the Paris authorities about the meter tests and find I can readily arrange to have the special meters tested at the same time without agreeing to the conditions of the test, I am informed (unofficially by the officials) that points will be strained as far as Edison is concerned but it must be done quietly, and I think I have it all right now with their chief man at the Hotel de Ville) so send on the meter with full and explicit details which Crosby & I will attend to or if Mr. Edison prefers he can send Wirt or White over with them, if Kennelly does not come. I will write further on this matter soon, and will only add that the Paris Municipal Authorities do and expect to do very little lighting their idea of this test not being to benefit themselves but to benefit the world and foster an important industry, this is French, their chief engineer told me they would let three firms do all the city lighting in all probability that they were not in that business and would probably never increase their present city plant now that the Edison and other companies were taking up minicipal lighting. It has been somewhat difficult for me to get as far as I did, but I think it will now be plain sailing and I will weite soon again on this subject. My letter is already too long, and I will postpone my

[ENCLOSURE]

writing of other matters till another letter. Please show this letter to Mr. Edison as he sent me some messages about the meter tests through Kennelly and wrote and cabled me about the Phonograph matters,

Yours very truly,

Wm. J. Hammer.

COPY.

Paris

EDISON LAMP CO.,

Harrison, N. J., June 3rd, 1885

Thomas A. Edison Esq.,

Orange, N.J.

Ack. June 4/85.

Dear Sir:-

Enclosed is letter received from W.J.Hammer, dated May 22nd. We have marked a passage in the letter with quotation marks to call your attention to it.

Yours truly,

EDISON LAMP CO.

By Francis R Upton Jr.

Treasurer.

[ENCLOSURE]

Pers

May 22nd, 1889.

Francis R. Upton, Esq., Tress. & Gen'l Manager,

Edison Lamp Company,

Harrison, N.J.

Dear Sir:-

Enclosed please find my receipt for salary for May 1889 I trust you have made the payments as requested to the German National Bank. I enclose also a Petty Cash Memo. up to April 30th 1889 inclusive. I have just received a letter from Phil Dyer saying he was to sail next week June 1st, I believe, The Expo. keeps open toll twelve at night now and as we are anxious to get everything in complete shape the boys are all working extra hours (without compensation) It is not saying a bit too much to say the Edison Depts. are attracting more attention than any exhibits in the show, we show one phonograph to from five to fiftee n thousand people per day and I have arrangements completed for handling many times this whem Mr. Edison sends us spectacles, cylinders &c he cabled me some were on the way after I had cabled four times, the Phonograph certainly is the feature of the Exposition, many have said so including Gen'l Franklin, Mr. Vanderbilt, the Russian Minister, Mr. Dredge (Engineering) and many others. Outcault is making me some rough sketches of our Depts. to send you together with a picture of the new Phonograph Pavillion in the Industrial Section (now completed and waiting for those slow american phonographs. Mr. Price Editor of the Elec. Review arrived yesterday and says the new Phonograph Pavillion is the handsomest thing he

[ENCLOSURE]

ever saw and I certainly think I have invested the money wisely and well especially considering the disadvantage we were put to in securing a space owing to Col. Gourauds delays, for inside of forty eight hours after I received the cable from Mr. Edison to "go ahead" the walls of the pavillion were going up.

"The Graphaphone Co. are very much exercised over our new "pavillion which makes their place look like a wood shed, they "are telling people that Mr. Edison or the Phonograph Co. pays "them 12. for each mach ne made as a royalty is this so ?"

They have about eight graphaphones working we handle more people per day with one phonograph I must close now will write soon again,

Yours very truly,

Wm. J. Hammer

Copy.

Paris

EDISON LAMP CO.

Harrison, N. J., June 6th, 1889

Thomas A. Edison, Esq.,

Laboratory, Orange, N.J.

Ack June 7/89.

Dear Sir:-

Enclosed is copy of letter which we have written Mr. Hammer, which contains copy of his cable to us and our cable to him.

Yours truly,

EDISON LAMP CO.

By Francis R Upton

Treasurer.

[ENCLOSURE]

Paris

June 6th, 1889.

W. J. Hammer, Esq.,

Paris, France,

Dear Sir:-

Your cable as follows received, "Am offered Presidency of Association American Exhibitors and asked to preside at dinner to Commission, shall I accept ?" We cable you to-day "Accept with our congratulations". This is done with Mr. Edison's approval.

We hope that you will fill the position with modesty and will not increase the size of your hat in consequence of the honor placed upon you.

We most heartily congratulate you upon the honor conferred upon you, for we consider that a great honor has been given you and know that you will do justice to your own reputation and credit to your friends.

Yours very truly,

EDISON LAMP CO.

By

Treasurer.

Copy.

American Speaking Telephone Company,

P.O. Box 5292.

Western Union Building,

Samuel M. Taylor,
Secretary.

New York, June 25th 1879

My dear Professor,

You will see by the enclosed, that the "Journal of the Telegraph" takes pride in your reunion, whatever may be the feeling of some of the W.U. officials. It occurred to me that it might be gratifying to you to know, that the place of honor was accorded to a description of "the Edison Exhibit."

Very truly yours

S.M. Taylor.

To
Prof. Thos. A. Edison.

June 28/79

Thank him for this.

[ENCLOSURE]

Paris

JOURNAL OF THE TELEGRAPH.

VOL. XXII. NEW YORK, JUNE 20, 1889. WHOLE NO. 432.

QUARTERLY REPORT OF THE WESTERN UNION TELEGRAPH COMPANY, FOR THE QUARTER ENDING JUNE 30TH, 1889.

EXECUTIVE OFFICE,
WESTERN UNION TELEGRAPH COMPANY,
NEW YORK, June 12th, 1889.

THE following statement exhibits the condition of the Company at the close of the quarter ended March 31st, 1889:—

Surplus January 1st 1889, as per last quarterly report	$8,310,883 76
Net revenues, quarter ended March 31, 1889	1,162,813 13
	$9,993,696 71
From which deducting for—	
Dividend of 1½ per cent. paid April 15th	$1,067,302 02
Interest on bonded debt	193,882 87
Sinking funds	20,000 00
	$1,281,185 89
Left a surplus April 1st, 1889, of	$8,712,510 82

The net revenues of the quarter ending June 30th, instead, based upon nearly completed returns for April, partial returns for May and estimating the business for June, will be about | $1,400,000 00

Add surplus April 1st, as above | 8,307,198 90

	$9,707,198 90
From which appropriating for—	
Interest on bonds	$100,000 00
Sinking funds	20,000 00
	$ 120,000 00
Leaves a balance of	$9,587,198 90
It requires for a dividend of 1¼ per cent. on the capital stock	1,067,302 02
Deducting which, leaves a surplus, after paying dividend, of	$8,519,896 90

In view of the preceding statements, the committee recommend the adoption by the Board of the following:

Resolved, That a dividend of one and one-quarter per cent. on the capital stock of this company be hereby declared payable on and after the 15th day of July next, to stockholders of record at the close of the transfer books on the 30th day of June, instant.

Resolved, That for the purpose of the Dividend hereby declared, the stock books of the company be closed at three o'clock on the afternoon of the 20th day of June, instant, and be reopened on the morning of the 1st day of July next.

Respectfully submitted,
NOAH DAVIS,
President.

THE tinfoil used to wrap Neufchatel cheese, chewing gum, candy, and chewing tobacco, is said to be dangerous on account of the lead in it. Its use for wrapping food has been forbidden in France.—*Sci. Am.*

THE EDISON EXHIBIT AT THE PARIS EXHIBITION.

PARIS, May 15, 1889.

The Edison exhibit forms a most important and attractive display, the more so as it is already practically complete. No one who examines this remarkable display can fail to be struck with the wonderful versatility displayed in the inventions of Mr. Edison. That one man alone should be the originator of no less than 450 patents, besides the 200 more applications for patents in his name which are still pending, is marvelous enough, but the wide range of applications covered by the patents is still more astounding. The exhibits comprise the most recent apparatus in all the leading branches of Mr. Edison's inventions, and may be classed under the following heads: Telegraphic, telephonic, phonographic, physical, electric lighting, underground conductors, lamp manufacture, the electrical separation of metals, and electric meters. We will first take a rapid glance at the principal objects of interest, deferring a more detailed examination until a later date.

In the telegraphic section we find at work the latest bridge quadruplex system, now adopted in this country; the duplex system, the phonoplex system of signaling, in which a form of telephone is used as a sounder; train telegraphy, the automatic telegraph, by which a speed of 1,000 words per minute has been obtained. The last named instrument is capable of transmitting either Roman letters or Morse characters, the former requiring five and the latter three wires. The five-wire system is the most generally adopted, the message being put into the transmitter by a punched slip moving over a metal roller. The roller is rotated rapidly by an electric motor, and the contacts between the battery and line are made through the perforations in the slip. At the distant end the currents produce by electro-motion corresponding symbols to those transmitted. This system was operated for some years between New York and Philadelphia and New York and Washington by the Automatic Telegraph Company and the Atlantic and Pacific Telegraph Company; and later, upon the absorption of these companies by the Western Union, it became the property of the latter. There are also exhibited the harmonic telegraph, stock printers, district messenger system, motograph relay, carbon relay, and rheostat. The motograph relay, which operates a local sounder or Morse circuit, is a marvel in itself. The contact closing the local circuit is attached to a spring resting on a revolving chalk cylinder, and the principle of the production of surface friction between the spring and the cylinder on the passing of a current through them, which was applied by Mr. Edison to his loud speaking telephone, is here applied, the spring responding in lateral movement to the successive currents received. The cylinder is driven by a small electric motor with worm gearing, rendering the instrument, therefore, self-contained.

In illustration of the same principle we find several instruments in the phyetal section which have been made specially for the show, among which we may mention one in which the experimenter holds a brass spring with a palladium tip, and slides the tip along a surface composed of blocks of various metals in succession. The current being passed through the metallic surface and the spring, a difference can be felt in the surface friction according to the different metals in contact with the spring. In this section also there are experimental incandescent lamps fitted with a central platinum wire between, but not touching the sides of the carbon filament, to show the "Edison effect," which is, that, while the lamp is burning, a galvanometer, or even a sounder, inserted between the positive terminal of the lamp and the isolated platinum wire is actuated every time the sounder circuit is closed. In this section is also shown the megaphone, which is an apparatus for concentrating waves of sound and rendering speech possible at a distance of three miles. There are two large cone shaped receivers, 7 feet long, and tapering down from 2½ feet diameter at one end to 1 inch at the other. A speaking trumpet, with an orifice 6 inches diameter, is fixed between the two receivers.

In the electric lighting section is exhibited a complete central station plant on the three-wire system. Everything will be installed according to the latest methods. The two similar dynamos to be run with this station are each of 125 Volts and 240 amperes, and run at 1,000 revolutions. Each machine weighs 4,340 pounds. The machines are shunt wound, and can be regulated as to their potential by an adjustable resistance inserted in series with the shunt wire. The three mains, or "omnibus" wires, are conducted from the machines to the distributing board, whence the connections to the various feeders are made.

These details of the central station system really demand separate treatment, and we must defer our description until we can enter exhaustively into the subject with the aid of diagrams. For the present we may say, however, that the underground conductor system is very fully shown, the conductors leading from the central station actually being laid down in pipes according to the latest method. Mr. Edison's original method was to enclose the two copper mains in iron pipes, and retain their distance apart by passing the mains through piece of thick millboard placed at intervals along the pipe. It was found, however, that it was necessary to connect together the millboard supports by string, in order that they should retain their relative positions during the running in of the insulation compound. The improvements effected and now employed consists in wrapping each conductor or bare copper round with a separate spiral of rope,

[ENCLOSURE]

which acts as a separator between the mains, and afterward an outer wrapping of rope round the outside of the conductors, which keeps their position central in the pipe and separates them from contact with it.

The process of lamp manufacture and the Edison electrolytic meter system is shown in great completeness by means of specimens of the actual materials through out the various stages.

Mr. Hammer, to whom the design of the huge model Edison lamp and the flashing effects in incandescent lamps which are to be exhibited on its pedestal are due, intends, we are glad to hear, to reproduce the marvelous effect of transformation of sound through the medium of two Edison phonographs, two carbon telephones, two motograph receivers, and two induction coils, which he demonstrated with such success at his lecture in the Franklin Institute, Philadelphia, between that place and New York.

I may mention that over the American Section, in the Machinery Hall, an inscription has been put up stating that the United States possess steam engines of 60,000 horse power, the power of which is transformed into electrical energy; and that, apart from transmission of power, this energy is used to supply current nightly to 2,000,000 incandescent lamps and 250,000 are lamps.—*Correspondence of the London Electrician.*

RECEIVING MESSAGES THROUGH THE SENSE OF TOUCH.

A REMARKABLE PAGE FROM THE EARLY HISTORY OF ELECTRIC TELEGRAPHY.

THE interesting account of the deaf and dumb telegrapher on page 7 of the *Electrical Review* for May 8, reminds me of a fact with which surely very few telegraph operators of the present day are acquainted, namely, that among the very first devices constructed for the purpose of using electric currents for telegraphic purposes, those operating by the sense of touch once occupied a prominent place.

The idea to use the alternate attraction of an electro-magnet for the purpose of transmitting signals at a distance was conceived by many minds very soon after its invention by Sturgeon in 1825. Barlow, in England, occupied then a prominent position among the electricians of that period, as among other things he had distinguished himself by his labors to correct the influence of ships' iron upon the compass needle, and had produced an electro-motor, beautiful for its simplicity, and which is called after him *the steel of Barlow*. He was asked to test the simplicity of operating electro-magnets at a distance, and he reported adversely, finding that he did not succeed as soon as the length of wire transmitting the current was measured by miles. His results were published and accepted, wherefore experimenters turned their attention in other directions. Among them was Professor Vorsselman de Heer, of Deventer, Holland, who found also that ordinary battery currents were not available to work electro-magnets through long wires, and finding that the current of a Volnaic pile could be made sensible to the touch over many miles of wire, constructed what is called the physiological telegraph, which I saw in operation at the University of Deventer, Holland, in 1838. The receiver consisted in a key board of eight keys, like a piano, on which the fingers were placed; each key was connected with a wire, so that a cable of eight wires was required. The alphabet was based on the 50 different combinations of two, which may be made between eight fingers, which were numbered, while he called the numbers of every two fingers in which the current was felt. These numbers were recorded by an assistant, until practice made him able to read without such a record.

If this inventor had known that Professor Henry had, in Washington, a little before this, succeeded in charging electro-magnets at a distance, simply by coiling them with long and fine wire in place of the heavy wire then customary, he might, perhaps, have labored in the same direction as Morse did, who, in the same year (1843), made his first application for patent, and a little later for a relay, which was also Henry's invention. Morse, however, invented the alphabet of dots and dashes, which was a most important improvement, because, simple as it is, it enabled telegraphy to be conducted over a single wire.

In the meantime those who had not heard of what was going on in this direction in Washington and New York, had faith in the physiological telegraph, which for long distances was supposed to be superior to the needle telegraph, which was gradually developing in England and Germany.

It is scarcely necessary to mention that the physiological telegraph was by no means in high favor among the operators, and very soon was put aside and is now forgotten.—P. H. VAN DER WEYDE M. D., in *N. Y. Elect. Rev.*

POSTAL STREET CARS.

MR. FRANK BROWN, postmaster of Baltimore, Md., makes a very useful suggestion in relation to the utilization of street cars to assist in the rapid collection and delivery of city mail matter. In most of the large European cities they now have pneumatic tubes, by which the quick delivery of special messages is accomplished at a high charge. But a much quicker, cheaper, and more serviceable system for the public might be easily arranged if the street cars were employed. In New York not only the street cars, but the elevated street railways might be brought into the work, and the city provided with a splendid system of postal delivery and collection. We have heretofore urged this matter upon the attention of the government. We wish some of our senators and representatives in Congress would take up the matter. It is simple and easy of accomplishment, and might be quickly put in operation.

The introduction of such a system, in addition to its great convenience to the public, would put an end to all those disgraceful interruptions of traffic that periodically take place when roughs obstruct the cars, abuse the drivers, and threaten the lives of honest citizens. The street car lines would then be declared mail routes, and no stoppage of travel would be tolerated.

Mr. Brown's suggestion in respect to the city of Baltimore, given in a letter to the New York *Tribune*, is as follows:

It is my intention, if approved by the department and the companies, to place letter boxes on the rear ends of every car in Baltimore City, and to have collectors collect mail from all sections of the city and deposit it in the first car that passes them, the collector to remain in his district and continue collecting and dispatching to the main office during the entire time he is on duty. Under this arrangement the dispatch and delivery of the mail would be greatly facilitated, as many of these letters would arrive at the office to make trains they now miss, and, in addition, the citizens of this city would have full benefit of the special delivery system, as a letter placed in a box on one of these car lines will proceed immediately to the post office (instead of remaining in a street box to be taken up by collectors), and on its arrival at the main office be delivered by special messenger.

As the cars pass the nearest point to the post office they would not be called upon to stop, but only to slow up sufficiently to allow the collector to open the box, take out the mail, and close the box. No additional expense would be incurred by the department other than the cost of the boxes, which would be nominal. The city being covered with a network of railways, every section would have equal advantages so far as the rapid collection of mails is concerned, and the letter carriers would not be forced to carry immense bags of mail through the rain, sleet, hail, and cold to the post office. The street lamppost boxes would remain intact as at present. In the event of a "tie up," or strike, these street boxes would be used as they now are, and the letter boxes on the street cars would be unused, as the cars would be packed in the sheds of the various companies. In case of a fire, which might blockade the cars, the collector on whose district the blockade occurred would be ordered to proceed to the fire immediately, empty the boxes, deliver, and report to the office.—*Scientific American.*

ELECTRICAL RAILWAY SYSTEMS.

THE storage battery system of electrical propulsion is the ideal method of running street cars, but, unfortunately, it is not as yet available, if considerations of economy are to be taken into account. Possibly, in fact it is extremely likely, that the expenses of operating the system may be greatly reduced by continued experiments designed to simplify the construction, lighten the weight and prolong the now comparatively short life of the battery. If that result shall be accomplished, the introduction of the system will be rapid, for the cost of equipment will then steadily decline, as its manufacture becomes more common and skillful.

In such circumstances, street railway managers contemplating changes from horse power to improved methods of conveyance, and especially those who look with a friendly eye on electricity, are naturally in a quandary as to how to act. Should they defy public prejudice by adopting the overhead method of traction, when permitted, it is among the probabilities that the storage battery would come to the front, and to the assistance of competing and neighboring lines. Hence the reluctance to make a change until electrical experiments shall have determined, with considerable certainty, whether overhead wires are the only hope at present in the way of electrical equipment. For the conduit system is a flat failure so far, not having worked satisfactorily at Boston, nor at San Jose, Cal., though it costs $50,000 or $60,000 a mile to put it in place

Science, however, contends that the dilemma in which street railway men are thus placed is apparent rather than real, since there are very likely that several years will be required to so develop and improve the storage battery that it can take the place of overhead wires. This, notwithstanding that the storage battery system will probably work well on level lines now, though debarred for economical reasons where grades of 4 per cent. and over are to be taken. In this interval—the time between now and the indefinite period when the secondary battery may become a supplanter of older systems—the overhead use of electricity might be adopted generally by street car men, and to advantage. The successful operation of the plant for two

[FROM A. THEODORE E. WANGEMANN?]

Pour

1889-07-14

Thomas A. Edison

PARIS EXPOSITION

LABORATORY
LLEWELLYN PARK, ORANGE
NEW-JERSEY U.S.A.
CABLE ADDRESS "EDISON NEW-YORK"

BUREAU EDISON
"PALAIS DES MACHINES"
Avenue de la Bourdonnais
CABLE ADDRESS "NEWARK PARIS"

Paris July 14th 1889.

Mr Thomas A. Edison,

Dear Sir,

On my arrival here I found as Expected the Phonograph running seradely, some records fair & ~~some~~ all the talking with either to deep or to light a cut. I have worked daily from 9 a.m. to 11 o'el P.M. in the Exhibition helping Partly Mr Hammer & instructing the boys on all points & making records & showing the Phon to important & prominent people visiting the Gallerie des Machines. Mr Hammer having been ill with fever, I had to take night hold in the Exposition. The Phonograph now is run what I consider to your satisfaction. Few days after my arrival the jury of the Phonograph class came & I arrived just in time to show off the phon. well to them

Thomas A. Edison

PARIS EXPOSITION

LABORATORY
LLEWELLYN PARK, ORANGE
NEW-JERSEY U.S.A.
CABLE ADDRESS "EDISON NEW-YORK"

BUREAU EDISON
"PALAIS DES MACHINES"
Avenue de La Bourdonnais
CABLE ADDRESS "NEWARK PARIS"

II

Paris July 14th 1889

We expect the jury again next week, when they will come in parties from 2 & 3 at a time. And the president of the jury told me to get points for the proper report. Mr Abbank (the american juror) told me privately You would have the gold medal on the Phon without doubt — on the other Exhibit Mr Aammer spoke to the jury. The graphophone have here 8 instruments of which 4 are in running order. I refrained from commenting on the graphophon here to the jury (although they wanted me to) I gave only few facts, as for instance: Speed of footstroke Phon & graphophon could not be as perfect as the ingenious motor & governor of Phon would give. — That the Phon recorded perfect out of the various reasons

Thomas A. Edison

PARIS EXPOSITION

LABORATORY
LLEWELLYN PARK, ORANGE
NEW-JERSEY U.S.A.
CABLE ADDRESS "EDISON NEW-YORK"

BUREAU EDISON
"PALAIS DES MACHINES"
Avenue de la Bourdonnais
CABLE ADDRESS "NEWARK PARIS"

III.

Paris July 14th 1889

But the best was the fact stated, (as known to most every juror) that the graphophone was recorded in the presence of 2 or 3 people who listened to it one at a time which record would not be known thereafter while your Phon was heard by 7 people at a time & reproduced to hundreds & thousands of people. (by they could see outside) — For a test I gave one piano cylinder from Monday morn. till Friday afternoon daily when it commenced to shown signs of wear. Then reproduced well known For a painter here a cylinder from Cincinnati Ohio absolutely perfect all the emotion of the old fathers voice in speaking & singing were there! — the same persons graphophon cylinder could not be reproduced at all! I modestly gave out the painters allowance his adieu to the jury. —

Thomas A. Edison

PARIS EXPOSITION

LABORATORY
LLEWELLYN PARK, ORANGE
NEW-JERSEY U.S.A.
CABLE ADDRESS "EDISON NEW-YORK"

BUREAU EDISON
"PALAIS DES MACHINES"
Avenue de La Bourdonnais
CABLE ADDRESS "NEWARK PARIS"

IV

Paris 18

Outside of that I called Mere attention to the comparisson of the whisper, the ordinary voice & the loud voice in the Phon & the graphophone. — but Mussis took them —. before going

The president remarked to French, that the Phonograph had been represented to him as similar to the graphophone, but he were astounded to find an instrument so close on perfection & outdoing the most Keenest demands of the most scientific for recording any noise whatsoever. —

I have been taking some Brass bands around the Exhibition grounds which draws crowds every time. Also took the american concert in the Trocadero.

Thomas A. Edison

PARIS EXPOSITION

LABORATORY
LLEWELLYN PARK, ORANGE
NEW-JERSEY U.S.A.
CABLE ADDRESS "EDISON NEW-YORK"

BUREAU EDISON
"PALAIS DES MACHINES"
Avenue de La Bourdonnais
CABLE ADDRESS "NEWARK PARIS"

I

Paris July 14 1889

I have a large rooms at Pleyel Wolff & Co the largest piano factory here & another at "Erards" free of charge in which I shall take records for the Exhibition & for the Laboratory for publication in probably one week.- At present I think it better for your interest to stay right in the Exhibition until the graphophon is knocked out.

On the presidents visit to the amerian section industrielle I had from the top of pavillion shouting phonographs, One

Vive le President Carnot
Vive la Republique
Vive la France

The other cornet with the Marseillaise. It was heard 3 to 400 feet away while the president inspected the American section & the waving of the american commissioners & the graphophone people could stop that Rous-

Thomas A. Edison

PARIS EXPOSITION

LABORATORY
LLEWELLYN PARK, ORANGE
NEW-JERSEY U.S.A.
CABLE ADDRESS "EDISON NEW-YORK"

BUREAU EDISON
"PALAIS DES MACHINES"
Avenue de La Bourdonnais
CABLE ADDRESS "NEWARK PARIS"

VI

Paris July 14 1889

Epic. ally not while he was listening to the Graphophone.

Machinery Hall is too noisy to take good records & not as good as it ought to be for Exhibiting. We have string after string of people (about 1500 a day) in a few words: the general opinion expressed freely is: however great the Exhibition is, the only two most marvellous things here are the Tour Eiffel and the Phonograph. — The newspapers which I enclosed the Ch. A. Painter Graphophone is nothing compaired with the E. perfected Phonograph —

Shipments per Baltimore Express arrive here in 3 - 4 weeks. The Wells, Fargo Co. guarrantees them in 12 to 14 Days. —

No signature?
Must be A. Theo E. Wangemann USA

Paris
Form No. 2.
50 21--15-1-89.

COMPAGNIE FRANÇAISE DU TÉLÉGRAPHE DE PARIS À NEW YORK

(FRENCH ATLANTIC CABLE CO.)

Messages Forwarded to all parts of the World.

PRINCIPAL OFFICES:

NEW YORK, 34 Broad Street, 1 Mercer Street, 11 East 14th Street. TELEPHONE No. 800 John.

LONDON, 24 Royal Exchange, E. C. PARIS, 55 bis Rue de Chateaudun. BREST, 35 Rue St. Yves.

Connecting with all FOREIGN TELEGRAPH Administrations.

No. 7

Date, AUG 6 1889

No. of Words 27

The following message is received via *French Cable* at 9.30 A. M. subject to the terms and conditions printed on the back hereof which are ratified and agreed to.

From Paris To Edison NY

Dr Quick Hammer hundred Clarionet Piano long agnouncement by native Frenchmen Germans and Italian also Varied Pianos turned down little more than regular

N C 2 17

N C — C P 61

Edison

No Inquiry respecting this Message can be attended to without the production of this paper. Repetitions of doubtful words should be obtained through the Company's offices, and not by *direct* application to the sender.

Phono

Indications de service.

Le port est gratuit.
Le facteur doit remettre un récépissé à souche lorsqu'il est chargé de recevoir une taxe.

+ EDISON DRÉXEL HARJES PARIS .

nom
le nom
télégraphique

L'État n'est re... du service de la correspondance privée par la voie télégraphique. (Loi du 29 novembre 1850, art. 6.)

N°

Timbre à date.

Pour ____ *de* ____ *N°* ____ *Mots* ____ *Dépôt le* ____, *à* ____ *h.* ____ *m. du* ____

= PARIS FR ORANGE NEVVJERSEY 139 15 VBRANGLO .
+ BARREL BLANKS SHIPPED SEVENTEENTH CLARINET PIANO GO FORVVARD
SATURDAY .+ BATCHELOR

N° 702. [Janvier 1891.]

Paris

Form No. 2.
10 M—4-89.

COMPAGNIE FRANÇAISE DU TÉLÉGRAPHE DE PARIS À NEW YORK

(FRENCH ATLANTIC CABLE CO.)

SEND YOUR ANSWER TO
11 EAST 14th ST.
DIRECT LINES TO
OCEAN CABLES

Messages Forwarded to all parts of the World.

PRINCIPAL OFFICES:

NEW YORK,
34 Broad Street,
1 Mercer Street
11 East 14th Street.
TELEPHONE No. 800 John.

LONDON,
24 Royal Exchange, E. C.
PARIS,
53 bis Rue de Chateaudun.
BREST,
35 Rue St. Yves.

Connecting with all FOREIGN TELEGRAPH Administrations.

No. 5

AUG 22 1889
Date,

No. of Words 12

The following message is received *via French Cable* at 9 30 a.m. subject to the terms and conditions printed on the back hereof which are ratified and agreed to.

From Paris To Roside Ivy

when may I expect at
50 phones and new
speakables ordered

J. Edison

* No Inquiry respecting this Message can be attended to without the production of this paper. Repetitions of doubtful words should be obtained through the Company's offices, and not by *direct* application to the sender.

(Opposite.)

Form No. 2.
50 M-9-1-89.

COMPAGNIE FRANÇAISE DU TÉLÉGRAPHE DE PARIS À NEW YORK

(FRENCH ATLANTIC CABLE CO.)

SEND YOUR ANSWERS TO 11 EAST 14th ST. DIRECT LINES TO OCEAN CABLES.

Messages Forwarded to all parts of the World.

PRINCIPAL OFFICES:

NEW YORK, 64 Broad Street, 1 Mercer Street. 11 East 14th Street. TELEPHONE No. 860 John.

LONDON, 24 Royal Exchange, E. C. PARIS, 55 bis Rue de Chateaudun. BREST, 36 Rue St. Yves.

Connecting with all FOREIGN TELEGRAPH Administrations.

No. 8

Date, AUG 23 1889

No. of Words 6

The following message is received *via French Cable* at 10.30 subject to the terms and conditions printed on the back hereof which are ratified and agreed to.

From Paris To Edison NY

Sail Saale

Usston

No Inquiry respecting this Message can be attended to without the production of this paper. Repetitions of doubtful words should be obtained through the Company's offices, and not by *direct* application to the sender.

The message is delivered to the addressee and received by him subject to the following *Terms and Conditions* which the addressee hereby ratifies and agrees to, viz.:

TERMS AND CONDITIONS.

To guard against mistakes or delays every message should be ***Repeated;*** that is, telegraphed back to the originating office for comparison. For such repeating an additional charge of one-quarter the regular rate will be made.

The Compagnie Française du Télégraphe de Paris à New York will not incur or accept any liability whatsoever, either for the due transmission of Messages to the Cables, or for their safe delivery at their destinations; nor will they accept any liability arising from delay or stoppage by reason of any accident to the cables or instruments, or from errors in cypher, or obscure messages, or caused by indistinct handwriting; nor will they consent to be liable, under any circumstances, for any sum whatever, as damages or otherwise, for loss resulting from errors, mistakes, delays, mis-delivery, non-delivery, or other causes, in respect of any message entrusted to them, beyond the return in the case of repeated messages, of that portion of the charge which may accrue to this Company out of the amount received from the sender for this and the other companies by whose lines such message may pass to reach its destination. This Company is not to be liable in any case where the claim is not presented in writing within sixty days after the sending of the message. This Company is hereby made the agent of the sender, without liability, to forward any message over the lines of any other company to reach its destination. The above terms and conditions shall also bind the addressee of the above message.

Edwin Ackerly
Jerome "
Arnold "
Hyde "

44 Wall St.

☞ *To reduce the risk of errors or delays please file any answer to this message at one of the Company's own offices.*

TAH

Form No. 2.
50 M—11-1-97.

COMPAGNIE FRANÇAISE DU TÉLÉGRAPHE DE PARIS À NEW YORK

FRENCH ATLANTIC CABLE CO.)

Messages Forwarded to all parts of the World.

PRINCIPAL OFFICES:

NEW YORK,
24 Broad Street,
1 Mercer Street
11 East 14th Street.
TELEPHONE No. 860 John.

LONDON,
26 Royal Exchange, E. C.
PARIS,
55 bis Rue de Chateaudun.
BREST,
35 Rue St. Yves.

Connecting with all FOREIGN TELEGRAPH Administrations.

No. 60

Date, AUG 28 1899

No. of Words

The following message is received *via French Cable* at ~~Paris~~ subject to the terms and conditions printed on the back hereof which are referred and agreed to.

From Paris To Frenelsy

No news about Prize yet

No Inquiry respecting this Message can be attended to without the production of this paper. Repetitions of doubtful words should be obtained through the Company's offices, and not by direct application to the sender.

Expos. Hon

Cable Address
"Edison New York"

From the Laboratory
of
Thomas A. Edison.

Orange, N.J. Nov. 12th 1889

Subject

A. E. Wangemann Esq.
Edison Exhibit
Paris France

Dear Sir,—

I beg to notify you of the following shipment made this day to you via Wells Fargo & Co's Express 1 barrel Phonograph Blanks. I enclose shipping receipt covering same.

Yours truly,
Thos. A. Edison.

Foreign

LE LIVRE D'OR
DU DIPLÔME COMMÉMORATIF
DE L'EXPOSITION UNIVERSELLE
de 1889

DIRECTEUR : J. BERKIN
15 rue Saint-Sulpice, 15
PARIS

Paris, le 8 décembre 1889.

MONSIEUR,

L'Administration du **Livre d'Or de l'Exposition Universelle** vous a dédié le Diplôme Commémoratif de l'Exposition Universelle de 1889.

En vous conférant ce Diplôme, symbole impérissable des labeurs que vous vous êtes imposés, nous désirons perpétuer le souvenir des légitimes récompenses et du succès mérité qu'ont obtenus vos produits dans cet immense Concours International, fête de l'Industrie, de l'Intelligence et de la Paix, auquel tous les peuples de l'Univers ont collaboré.

Veuillez agréer, Monsieur, l'assurance de ma considération la plus distinguée.

Le Directeur,
J. BERKIN.

NOTA. — Pour se couvrir des frais d'expédition, de régie générale, de timbres et autres, fixés par l'Administration du Livre d'Or de l'Exposition universelle, à la somme de 2 fr. 75, vous voudrez bien nous adresser par le bureau de poste de votre localité, un mandat poste international de 2 fr. 75, et le Diplôme commémoratif de l'Exposition universelle qui vous est destiné portant dans son cadre les récompenses décernées. la mention de vos produits exposés, ainsi que le pays. le groupe et la classe dans lesquels vous figuriez, vous sera expédié de suite. sans aucun frais, par les soins de l'Administration du Livre d'Or de l'Exposition

(Dimensions du Diplôme Commémoratif 33 centimètres sur 55.)

Prière d'adresser toutes correspondances à M. J. BERKIN, directeur du Livre d'Or de l'Exposition, 15, rue Saint-Sulpice, Paris, en nous donnant en même temps l'orthographe de vos noms, prénoms etc., ce qui nous servira au libellé exact de votre diplôme.

Imp. — Pick frères & Jouret, 7, rue des Canettes

[FROM PHILIP S. DYER?]

Dear:

Hammer is getting on in Paris, the boys are all hard at work, doing all they can to push things. The whole thing will be a grand affair, and you must surely arrange to come over. I will remain here for 10 days or so, and then go to Paris for four or five days to keep pace with what is going on. Col. Gouraud treated Hammer unfairly, and meanly by cabling to Mr. Edison to cable Hammer not to exhibit his Phonograph in Paris before Mr. (Gouraud) had given his exhibit and lecture on the 16th inst. Gouraud borrowed Hammer's Phonog, pretending to need it for some "Baby" lecture in England, but really to keep it out of Hammers hands in Paris as long as possible. Hammer dropped into Gauraud's net beautifully and now feels that G--- has played him. I sympathize with Hammer, because he treated Gouraud in such a fair way, giving him his lecture to copy and use, and lots of information which is a help to Gouraud, and told G-- in my presence that he had not the slightest intention of showing the Phonograph in Paris in any public way, unless in accordance with his (Gouraud's) judgement. That man Gouraud makes me tired, and I feel sure that Mr. Edison also will be somewhat fatigued before he gets through with him.

Your remember two years ago I warned you against Gilleland. For over four years I advised my brother Dick to look out for Tomlinson and not get too thick with him "

Estimate on Public Lighting

Installation

	Quantities	Price of the Unity	Sum
Buildings for 6 Manufactories of 400 square metres each	2400 sq. M.		frs 60,000
Chimneys & horizontal courbs, minus talking back, of material	6	2500	15,000
Foundations for 30 steam Generators of 100 horse power (average)	30	1500	45,000
Foundations for 30 steam engines of 100 " " "	30	2500	75,000
Steam generators of a total power of 3000 horses; setting, rent, and removing at 50 francs per horse	3000	50	150,000
Steam engines, systems of fixation; setting, rent removing, at 70 francs per horse.	3000	70	210,000
General piping for the 6 manufactories ——	6	8000	48,000
110 Dynamos of a total power of 3000 horses; setting, removing & resetting anew (1/3 of value)	3000	60	180,000
Subterranean & Areil Cables; setting, rent, & removing of same (20 Kil. at 300 frs per Kil.; 80 Kil. at 1200 frs per Kil.)			208,000
1000 Arc Regulators; setting, removing & resetting anew, at 80 frs. per regulator, (1/3 of value). ——	1000	80	80,000
20,000 incandescent lamps, including setting and necessary wires, at 15 francs a lamp, fixt in place.	20,000	15	300,000
100 belts of 15 metres in average, & c. 0.25 centimetres wide	1500 M.	20	30,000
Total for the expenses of setting, resetting, rent & putting in order ——	frs 1,401,000		

Exploitation

Steam & Water, at frs 0.15 centimes the horse power foreseen sum of 600 hours	1,800,000 hours	.15	270,000
Attendance to regulators at 15 centimes an hour	720,000 hours	.15	108,000
6000 Incandescent lamps at 4 francs each	6,000	4.—	24,000
General expenses about			100,000
Unforeseen expenses —— previously experienced —— frs			97,000
Total of Exploitation expenses	599,000		frs 2,000,000

§ 4. Repartition of the Grounds to be Lighted

Grounds	Number of Lamps: Arc Regulators	Number of Lamps: Incand. Lamps	Total terminous intensity in parcels	Adherents to the Syndicate intrusted for the lighting
Court of the Motive Power	40	——	4000	Ducammun Company
Court + Entrance Labourdonnais	20	——	2000	" "
Court Suffren	5	——	500	" "
				Gramme Society 34 regulators
				Sautter Lamaminoy & Co 20 "
				Ducammun Co 92 "
				Borssat 10 "
				Fabius Henrion 12 "
				French Society of Agricl Materials 12 "
				Pappi 5 "
Machinery Hall	296	730	76220	Edwell Jr 10 "
				Crampton 40 "
				Jasper 17 "
				Belgian Society 11 "
				Alioth + Co 18 "
				Oerliken Factories 15 "
				Farriant Society 360 lamps
				Crompton 160 "
				Garnot 10 "
				Woodhouse + Rawson 200 "
Annex to Class 61	30		3,000	Borssat
Vestibule to Machinery Hall	10	320	1,300	Forges + yards of the Mediterranean Sea
Gallery of 30 Metres	40		4,000	Cance Society
Facade of the Dome Central	10		1,000	" "
Pavillons immediately at sides of Dome	16		1600	
Connecting Pavillions	10		1000	Clerc Syndicate (Milde')
Restaurant Gallaries	118		4300	Society for the transmission of power by Electricity
Gallery Desaix	46		11600	" " " " " " " "
Upper Garden	24		2400	" " " " " " " "
Dome Central		80	48000	
To Report	623	1130	114,040	Gramme Society

Repartition of the Grounds to be lighted (Continued)

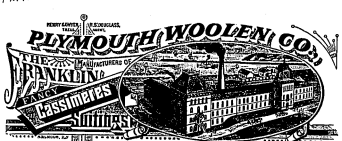
Grounds	Number of lamps: Arc Regulators	Number of lamps: Incand. Lamps	Total Luminous Intensity	Adherents to the Syndicate intrusted for the Lighting
Forward	623	1130	114,040	
Orchestra Kiosks		200	200	Society for the Electric Working of Metals
Lawns of the Upper Garden		1000	500	" " " " " " "
"Formige" Fountain	40	200	8100	Crampton, Rothschilds' societies
Feerie Fountain	24			Gramme Society
Administration Buildings		400	400	Continental Edison Co
Gallery Rapp	46		4600	" " "
Entrance Rapp	22	100	2300	" " "
Exterior Facade of the Fine Arts and Edison Court	30		3000	" " "
Covered walks of the Central Garden		1000	1000	" " "
Porches of the Palaces & Entrance Gates		250	250	" " "
Lawns of Central Garden		4000	2000	" " "
Bushes and Magnatias		1000	1000	" " "
Facade of the Palace of Fine Arts & Liberal Arts	31		3100	Electric Co
Formige "Staircases" & Balustrades	31		3100	Electric Lighting Society
Central Garden	54		5400	" " "
Lower Garden	22		2200	" " "
Quay & Railroad Trenches	60		2400	" " "
Garnier Exposition	24		960	" " "
Agricultural Gallery	30		1200	" " "
Fountain underneath "Eiffel" Tower	30		3000	" " "
Iena Bridge	4		1400	" " "
Passerelle of the Alma	10		400	" " "
Reserve	16		1600	" " "
	53			
Totals	1150	10000		

1889. Fort Myers (D-89-47)

This folder contains correspondence, property tax receipts, and other documents pertaining to the maintenance of the homes and properties of Edison and Ezra T. Gilliland at Fort Myers, Florida. Many of the letters are by William E. Hibble, caretaker of the property.

Approximately 70 percent of the documents have been filmed. The following categories of documents have not been filmed: routine bills and receipts regarding goods purchased and services performed at Fort Myers.

Florida



P. O. BOX 397. Plymouth, Mass., Jan 1 1889

Thos A. Edison, Esq.
Orange, N. J.

Dr Sir. Your favor Aug 28th was recd. saying Mr Gilliland would write me about the Fort Myers, Fla. matter. Dont know when he retd from England. Has he retd

Yours truly
R S Douglas

Florida - Jas K Myers.

E. T. GILLILAND,
177-179, BROADWAY.

Rec'd Jan 8 1889

NEW YORK, Jan. 4th, 1889. 18

Mr. A. O. Tate,

Edison's Laboratory,

Orange, N.J.

Dear Sir:-

I enclose herewith copy of a report from Wm. E. Hibble, the man who is in charge of the Florida property. His first year ended on May 1st, 1888 and his report shows disbursements of cash received, up to the first of the present year. There is due him from May 1st 1888 to Jan. 1st, 1889, 8 months salary at $50 per month, $400, and a balance from the previous year of $68.59, total $468.59. One-third of all his salary from May 1st, 1887 to Jan. 1st, 1889, 20 months, at $50 per month, $1000, should be paid by me, in addition to which he has disbursed on my account $236.46, making a total of $569.80. I have paid him during that time $825.

333.34

In accordance with what I assume would be Mr. Edison's wishes I have notified Mr. Hibble that the accounts would be separated in the future and that he should look to Mr. Edison for balance due and his regular salary hereafter.

If Mr. Edison does not object, Mr. Hibble can continue to look after my place and I will pay him one-third of his salary as heretofore.

E. T. GILLILAND,
177-179, BROADWAY,

NEW YORK, 18

According to Mr. Hibble's statement there is due him from Mr. Edison as follows:-

2/3 Salary	20 months at $50 per month	$666.66
Paid out on account of Laboratory		351.56
Paid out on account of House		205.57
		1223.79
	Cash paid by Mr. Edison	500.00
Balance due Hibble from Mr. Edison		$723.79

Please acknowledge receipt of this letter and enclosed report, and greatly oblige,

Yours truly,

E. T. Gilliland

[ENCLOSURE]

Expenditures

Myers. Dec 17. 1888

1887.				
July 1.	Chas. Brown.	Carpenter		25 00
"	C M. Corbett.	Mason.		49.75
"	N. S. Sherwood	Mason asst		22 75
"	J. R. Williams.	Sals on Mill		75
"	Gus. Maywald	General work		42 75
"	A. Funck	Carpenter		30 00
"	J. O. Bramin.	Carpenter		28 25
Sept 1.	A. Funck	Carpenter		48 75
"	Hoskins.	Blacksmith		2 50
"	Rylander	Lumber		100 00
"	Mills & Wheeler.	Lumber		15 00
"	Davis.	Wood		10 00
"	Gus Johnson	Carpenter.		3 50
"	Frank Bramin	Sals on mill		50
"	Postage Stamps			25
"	Gus Maywald	General work		20 00
Nov 25.	Gus Maywald.	General work		54 65
"	J. O. Bramin	Carpenter		51 10
"	Telegraph dispatches			337
"	Sayes City.			45 75
"	Stout.	newspapers.		376
"	Davis.	Wood		8 00
"	Mills & Wheeler			12 79
1888.				
Jan 31.	W. E. Hibble			9 23
" "	Evans.	2 Gals Paint Oil		1 60.

[ENCLOSURE]

Feb 15.	Evans.	2 Gals Paint Oil.	1 50
Mar 1.	W.E. Hibble		850
Mar 7.	W E Hibble		100 00
" "			1600
" "	Sayes.	County and State.	8400
Mar 24	W.E. Hibble		6627
" 26	D.O Hickey.	Harrow.	700
April 12	Forquer	8 Trees.	200
May 3	Forquer v Roan.	Saunch	2500
June 12	W.E. Hibble		30000
" "	Capt Johnson.	Pine Apple slips.	820
July 12	Gus Traywald.	digging well	150
" 30	Sayes.	City	4550
Sep 15	W.E. Hibble		10000
" 20	G. Seathlean.	Sloop to Punta R.	300
Oct 6	Virgil Homers.	mowing	300
" 8.	J.J. Eyres	Trees.	400
" 13	Virgil Homers et al.	mowing.	1500
" 25	Virgil Homers.	weeding.	150
Dec 13	Chas H Corbett.	masonry lime.	11 62
			1393 59

Laboratory	351 56
Edison.	20557
Gilliland	23646 1393 59
Hibble.	60000
	1393. 59

[ENCLOSURE]

Laboratory — Myers. Dec 17. 1888

G Brown	25 00	
J.R Williams	75	
Maywald	118 90	
Funck	26 00	
Braunin	22 88	
Harkew	2 50	
Davis	18 00	
Mills & Wheeler	27 79	
Geo Johnson	3 50	
F Braunin	50	
Por Stamps	25	
Tele dispatches	3 37	
Pages	58 42	
Harrow	7 00	
Trees. Forguer	2 00	
Pine Apple slips	8 20	
Seachleau	3 00	
Trees. Ayres	4 00	
Stoners	19 50	351.56

Gilliland

Corbett	24 88	
Sherwood	11 37	
Funck	24 65	
Braunin	27 10	
Rylander	50 00	

[ENCLOSURE]

Sayles.	5841	
Stout newspaper	188 / 0 - 1887	
Paint Oil	155 /	
Forguer & Roan	2500 /	
Corbett chimney	1162 ✓	236.46

Edison

Corbett	2487	
Sherwood	1138	
Furick	2810	
Bramin	2937	
Rylander	5000	
Sayles.	5842	
Stout.	188	
Evans. oil.	155	20557
		+793.59.

Monies received from Edison & Gilliland since May 1. 1887.

	E. A. Edison.	E. J. Gilliland
1887 Sep 1	200.00	July 1. 1887. 200.00
1888		Nov 25. 200.00
June 12	300.00	Mar 6. 1888. 200.00
		Mar 20. 100.00
		May 3. 25.00
		Sept 15. 100.00
	$ 500.00	$ 825.00

Florida

Gm

1889

Myers Fla. Jan. 12. 1889

Mr. T. A. Edison. Orange. N. J.

Dear Sir.

I received a letter from Mr. Gilliland a few days since stating that the business relations heretofore existing between yourself and him had ceased and that he wished a report. which I made and sent with explanations as I understood it.

My instructions were to address all my communications to him. which I have done understanding that he was your business agent and had charge of this place with all its concerns this is the reason if any is needed that I have not written you personally understanding that all the business was in Mr. Gillilands hands, I felt that I would be a trespasser on your time and therefore refrained from doing so.

The division named in his letter was not explained to me till then that is not fully but I have kept the accounts so they can be readily adjusted if the proportion are not correct the statement sent him was subject to his approval or correction prior to sending you a corrected or approved report or duplicate

I have now received his answer which says he has sent you a copy, and not knowing whether it is a full copy or only the figures not containing the explanations, which may be due you— I will explain I have kept an exact account of the houses separate. but not of the general work on the grounds which I have worked as a unit but have charged all that to the laboratory. (I have hired no help the last year but only a few days to cut the grass). The fence. grounds. trees and all general work has been charged to the lab as per report sent: if this is not correct I can make another giving exactly a fully divided statement. But there are also bills paid by yourself for lumber & store bills which I have no account of— if I had permission I could do better by buying cash for such things as I could probably buy at a discount of 10 to 20 per cent. The oil charged on the bill now sent closing the year from Simmons & Evans was used in painting the fence. I used up the old paint left from the houses.

I should be glad if you will send me $100— as the State and County taxes are now due $34.00.

I shall be very glad with any in—

structions and also to correct any errors I may have committed through not understanding affairs –

Yours very respectfully
William S Hibbe

PS. If you wish the property divided on future assessments will have it done
WSH

OFFICERS:

Rev. W. P. GARDINER, President.
W. W. FOOSE, M. D., Mayor.
L. C. WASHBURN, M. D., Health Officer,
C. H. STEBBINS, Sec'y.

Office of FT. MYERS

L. C. WASHBURN, M. D.,
HEALTH OFFICER
and
PORT INSPECTOR
LEE COUNTY, FLORIDA.

Fort Myers, Jan. 14 1889.

Ans. 20/1/89.

Thos A. Edison
Orange

Dear Sir. Knowing that there are various reports, about Yellow Fever, I thought I would say, that I have been in many parts of Fla. where Yellow Fever has been, & find it has Entirely disappeared. I left Dec 18th & visited Gainsville, Lake City, McClenny & other parts in the north part of the State & returned Dec 26th. There is not the slightest danger now, in Comany. We have never had, an Epidemic, of any kind nearer, than 100 miles from Fort Myers. Wm Hibbs, is doing more improvement, than any other man, you have had, on your place here.

Yours Etc
L C Washburn

Florida

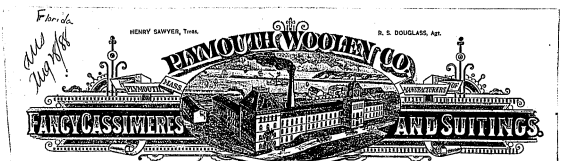
January 15, 1889.

M r. E d i s o n,-

In reference to the attached correspondence, Can you give me any information in regard to the error in boundary lines between your place in Florida and that of Mr. R. S. Douglas?

You write Gilliland personally + fix it

[ENCLOSURE]



P. O. BOX 397.

Plymouth Mass Aug 16 1888

Thos A Hendrickson Esq

Dear Sir

Mr Thomas who lived on my place adjoining yours on the Oklahoma Ranche near Fort Niggs informed me that you Mr Gilliland thought there was some error in boundary lines between our places. Can you give me particulars as I wish to get the matter properly adjusted preparatory to selling the place. An early reply will favor me

Yours very truly

R S Douglas

[ENCLOSURE]

Fort Myers

Aug , 98th,

Mr. R. S. Douglas,

Plymouth Cordage Co.,

Plymouth,

Mass.

Dear Sir:-

Mr. Edison asks me to say in reply to your letter 18th inst., that as Mr. Gilliland who is familiar with the subject which you refer to, is at present in England, he would prefer to let the matter remain in abeyance until Mr. Gilliland's return. We expect the latter home in the course of a month.

Yours truly,

Private Sec'y.

Florida

Jas. Tibbles

Fort Myers, Lee County, Florida.
Jan 20th 1889.

Mr Edison!

Dear Sir!

I wish to ask permission to use your air pump a little in some experiments with fresh fruit, I do not wish to remove the pump at all but to take some of the fruit to the Office to extract the air from them, And of course if my orders to Mr Tibbles, procure the experiments with out special permission from you. I can refer to any Officer of this county as to my self. Please favor me a line & greatly oblige.

Respectfully
A. A. Gardner.

Florida

E. T. GILLILAND,
177-179, BROADWAY,

NEW YORK, Jan. 31st, 1889. 18

Mr. A. O. Tate,

The Edison Laboratory,

Orange, N.J.

Dear Sir:-

Replying to your favor of recent date, concerning Florida property, will say that the property of Mr. Douglass does not adjoin that of Mr. Edison. This was fully explained to Mr. Thomas, the agent of Mr. Dougkass and a plan agreed upon between Mr. Thomas and myself for straightening out the boundary line. The maps and drawings which show the new line as agreed upon, was left by me at the Laboratory in Orange, together with some other papers and drawings concerning the Florida property, which I will be obliged to you if you will send to me.

Yours truly,

E. T. Gilliland

Form No. 1. Florida

THE WESTERN UNION TELEGRAPH COMPANY.

This Company TRANSMITS and DELIVERS messages only on conditions limiting its liability, which have been assented to by the sender of the following message. Errors can be guarded against only by repeating a message back to the sending station for comparison, and the company will not hold itself liable for errors or delays in transmission or delivery of Unrepeated Messages, beyond the amount of tolls paid thereon, nor in any case where the claim is not presented in writing within sixty days after the message is filed.

This is an UNREPEATED MESSAGE, and is delivered by request of the sender, under the conditions named above.

THOS. T. ECKERT, General Manager. NORVIN GREEN, President.

NUMBER	SENT BY	RECD BY	TIME
29	Via	S.	20 pd Via Jax

ORANGE, N. J. 13 H 11 1889

Received at

Dated Punta Rassa Fla 11

To Thos A Edison

Will you sell the twenty foot extra smoke stack if not can I have it if I replace bibble willing

E. H. Scheltz

Ford Myers
Ans. 19/2/89.

Myers Fla Feb. 14. 1889.

Mr. T.A. Edison Orange N.J.

Dear Sir.

Your favor of Jan 31st received stating enclosure of check for $100- as it has not arrived and fearing it is lost or mislaid I thought I would wait no longer. I have been waiting for that & would have written before as heretofore you have sent it in an envelope by itself. I would not trouble you again but thought if there is anything wrong the sooner known the better.

I would be glad to see you down but so far the weather has been wet cold and very unpleasant.

Yours respectfully

William B Dibble

Myers

September, 1888.

TAX COLLECTORS MUST USE THIS RECEIPT, ONLY, FOR TAXES OF 1888.

W. D. BARNES, Comptroller,

STATE OF FLORIDA, Lee County } *Tax Receipt No.* 248 FOR 1888.

Received of Thomas A Blount

for State and County Taxes for 1888, *on Real and Personal Property, as follows: Value of Personal,* $ 2364.00 Personal Pays..... *Real,* $ 500.00 Real Pays.....

General Revenue	$ 7.40		$ 15.00
State School Tax	$ 2.35		$ 5.00
Total State Taxes	$ 10.20		$ 20.00
County Revenue	$ 12.75		$ 25.00
County School Tax	$ 10.20		$ 20.00
County Road Tax	$		$
Jail	$ 7.65		$ 15.00
Total County Taxes	$ 30.60		$ 60.00
Aggregate Taxes, Personal	$ 40.80	Real,	$ 80.00

Dated Feby 27 1889

W. L. Langford Tax Collector.

DESCRIPTION OF LAND PAID ON.	SEC.	T.	R.	ACRES.
S E ¼ of S E ¼	23	44	24	14

When space is not sufficient for Description of Land, continue on back of receipt, or on an attached slip.

Fort Myers.

Ans. 21/3/89

Myers Fla. Feb 28 1889

Mr T. A. Edison. Orange N. J.

Dear Sir.

Your favor of 19 inst received with cheque for $100.00 I have paid the State and County taxes which are increased to $120.80/100 formerly $84.00 on enquiring the reason for the extra was informed by the collector that the personal property was assessed last year which previously had been omitted

Value of personal 2550.00 Tax on same $40.80
Value of real 5000.00 Tax on same $80.00

I have taken but one receipt but Mr Gilliland has sent down his one third i.e. $28.00 thinking the taxes would be the same I have written him and he will remit the balance and if you desire it I will have the assessor make a division.

I received a letter from Mr Shultz of Punta Rassa stating he had a dispatch

from you loaning or selling him the extra joint of smoke stack that was lying here. The piece was 20 ft. long 2 ft. and ⅜ inch thick with ½ inch collar on top and flange for bolting on bottom.

I would suggest selling it as when another stack is needed it would be best to have it all new and if you desire it I will collect the bill if you can give me the price in New York and can probably find out the freight from that place to Myers. or perhaps it would be more correct to ascertain the freight and add to the bill. I leave this with you and remain Sir

Yours respectfully

Wm E. Hibble

Iron mining port

Florida

Myers. Fla. March 27-1889.

Mr Thomas. A. Edison. Orange. N. J.

Dear Sir.

Your favors of 5th and 27th inst received. I will write Bailey in reference to smoke stack.

I will also have the Assessor make a division of the property. I suppose you would like it made under the same rule of one third.

I received a letter also from Mr Gilliland with cheque for fifteen Dollars to complete his part of the State and county taxes.

Yours respectfully

William E. Hibble.

Flower

Myers Fla. May 5 89

Mr Thomas A Edison Orange N.J.

Dear Sir.

Will you please send me at your convenience $200- One hundred of which if you have no objection I would like to reserve to pay for such things as I need as corn for the mule once in a while. nails &c And the city taxes as they call them will be due about July which last year were $45.50 total

I wrote Shultz about smoke stack placing the value at $55.00 but have heard nothing from him.

The Houses should be painted after the rainy season and if you decide to paint I will send a bill of material needed and Mr Edison can select the colors. I will also write Mr Gilliland on this point and if you prefer painting alike or agree to have them so. I will make out bill for the whole or separate as you may decide.

Yours respectfully

William E Hibble

Florida

Write Mrs Hibble saying Mr. Edison
does not intend to do more Mr. Gilliland's house
See if Myers Fla. May 23. 1889.
estimate includes this house.

Ans'd 6/7/89 Mr. Thomas A. Edison. Orange. N. J.
June 7

Dear Sir.

Your favor of 17 inst received. with check for Two Hundred dollars.

I have enclosed bill for paint and sketch showing as nearly as possible the style and giving quantities for each detail including laboratory fence and other buildings.

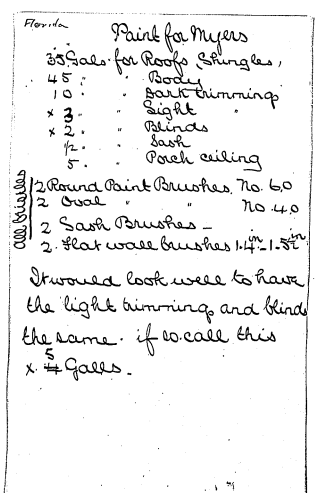
I think the estimate ample. but it will depend somewhat upon the selection of tints. as very light ones will necessitate an extra coat.

I have no means of ascertaining the best route but probably via Key West as that way is all water

Yours Respectfully

William E. Hibble

[ENCLOSURE]



Florida

Paint for Myers

35 Gals. for Roofs Shingles,
45 " " Body
10 " " Sash trimmings
x 3 " " Light "
x 2 " " Blinds
½ " " Sash
5 " " Porch ceiling

All Brushes

2 Round Paint Brushes No. 60
2 Oval " " No. 40
2 Sash Brushes -
2 Flat wall brushes 1.4" - 1.5½"

It would look well to have the light trimmings and blinds the same. if so call this x 5/4 Gals.

OFFICERS:

Rev. W. P. GARDINER, President.
W. W. FOOSE, M. D., Mayor,
L. C. WASHBURN, M. D., Health Officer,
C. H. STEBBINS, Sec'y.

Office of FT MYERS

L. C. WASHBURN, M. D.,
HEALTH OFFICER
and Asst. Insp. 4/89
PORT INSPECTOR
LEE COUNTY, FLORIDA.

450

Fort Myers, May 31th 1889

Thos A. Eddison Dear Sir. We are trying Orange) to Establish a Government Experiment Station, at Fort Myers. Our Citizens were required, to furnish 40 acres of ground, well fenced & to put up a house & barn, according to Specifications. We have secured the land and Cash about $500,00 to put the other improvements, under contract. Knowing you, to be a Public Spirited man, I thought you would help us, in this Enterprise. If you can, you can remit to Robert Cranford, Esq. Parker & Co's Bank, our Board of Trustees, at Fort Myers. Bartow is the next choice for the Station, if Fort Myers does not Comply with her promise. Our people, have had a hard time, owing to Yellow Fever having visited Fla. the past two years & can do no more. Unless we can get help from outside of Florida, the Station will go to Bartow.

Yours Etc. L. C. Washburn M.D.

P.S. I Enclose a paper, that I read at Ocala in Feb. which will show you, that this matter is no humbug.

M

Robert Cranford
Formerly
Lee County.
Ft. Myers, Fla.

Ft. Myers, Fla. June 15th 1889

Thos. A Edison Esq.
Orange -
New Jersey.

Dear Sir.

Yours from of June 4th to hand with enclosure a statel (check for $50.00) in and of the Sub Experiment station at Myers, for which accept our sincere thanks.

We regret that you did not find it convenient to Spend a few months with us the past winter, but trust that in the future you will find it convenient to make it your winter Home, and see personaly what we have done with your liberal donation -

Very truly Yours
Robert Cranford.
Chairman Board
of Trustees -

The chart of "House & Villa" paints is in Mr. Gates' office M.

Myers. Fla. June 23. 89

Mr A.O. Gate . Orange. N J -

Dear Sir.

Your favor of 14 inst only received - I am sorry I have not been sufficiently explicit. but I under - stand that Mr Edison's business. and all his affairs. are entirely separate - independent, and very way apart from Mr Dillilands. and the material sent for will be used on Mr Edisons premises alone i e. his dwelling houses. laboratory. store house - old house - and his part of the fence -

Your respectfully

William E. Hibble

Mr Edison

Ft. M. yes

Ans. July 22/88

Myers Fla. July 11. 1888.

Mr Thomas A Edison. Orange. N. J.

Dear Sir.

As Mills, the party who through Shultz bought the smoke stack has sold out, and meeting the present proprietor Wilhelm I spoke to him about it. he said he would gladly furnish you any lumber on that a/c. If this meets your approval, there will be some lumber needed to repair the wharf - some new gate posts for the main gates and a little for some other purposes and if you will need the lighter, it will call for a new bottom. Rumor has it you have a light draft steam boat to send down - if so you can dispense with the lighter, probably dispose of it There is a little carpenter work needed to complete the new addition, would you like that done. I would like to know in time so as to make all necessary arrangements. I have been up to pay the taxes, but the books are not ready. I will pay Stout for the "Myers Press". will charge Mr Gilliland's his part 1/5 of work and material done on wharf. The rainy season is now in full blast. Yours Respectfully. William E. Hibble.

Ft Myers

Ans July 22/89

July 16. 1889. Myers. See Co Florida

Mr Thomas A Edison. Orange. N. J -

Dear Sir -

Enclosed please find bill of Simmons & Evans since March 9. 1888. this bill was sent to Mr Gilliland last Jan who returned it to me with request to separate such goods as were used for his benefit exclusively. I replied that I considered the whole bill (18.41) came under the one third rule and that his part was 1/25 (.72) he consented to this arrangement up to the end of the year and requested me to pay for all purchases I might make for him in the future, but he has not yet sent down the money to do so. Shall I charge it to him or will you settle it with him?

I wish to correct an error made in my last. in speaking of rubber repairs I said I would charge Mr Gilliland with one third on referring to your favor of Jan 31. find that he is to be charged with one half - I will follow this instruction.

I have purchased nothing to be charged to you since Sept 16. Yours respectfully

William B Hibble

Myers Florida July 26 1889

Mr A O Tate Orange New Jersey

Dear Sir

Your favor of 22nd inst received with Simmons & Evans statement for division.

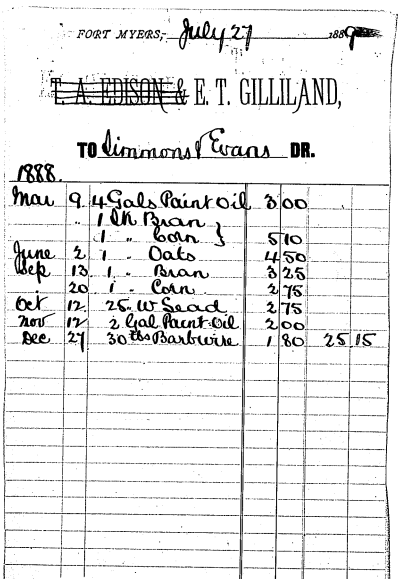
I kept no separate a/c till Jan 1st 1889 under the supposition that the goods procured were for the mutual benefit of Messrs Edison & Gilliland. I have sent bill charging Mr L with 25% as his third of statement to Dec 1888. Since then everything is separate as Mr Edison requested and I will keep it so and endeavor to pay cash for such incidentals as I may need. Keeping everything separate as far as it is possible to do while looking after both places.

Hoping this is satisfactory and that it will save Mr Edison any further trouble -

Yours respectfully

William E. Hibble -

[ATTACHMENT]



FORT MYERS, July 27 188[illegible]

~~T. A. EDISON &~~ E. T. GILLILAND,

TO Simmons & Evans DR.

1888.						
Mar	9	4 Gals Paint Oil	3	00		
		1 Ctr Bran				
		1 " Corn	5	10		
June	2	1 " Oats	4	50		
Sept	13	1 " Bran	3	25		
	20	1 " Corn	2	75		
Oct	12	25 lbs Seed	2	75		
Nov	17	2 Gal Paint Oil	2	00		
Dec	27	30 lbs Barbwire	1	80	25	15

THIS BLANK RECEIPT. ONLY, MUST BE USED BY COLLECTOR.

State of Florida, Lee County. Tax Receipt No. 35 For 1889

Description of Land.	S.	T.	R.	A.
1/3 Interest in Lot 21	23	44	24	

Received of E. J. Williams

For town taxes for 1889, on real and personal property, as follows:

Value of Real, $ 16.65.00

Personal, 50.00

Total, 66.65

Dated, Fort Myers, Fla August 13, 1889

S. W. Langford

Collector of Town.

THIS BLANK RECEIPT. ONLY, MUST BE USED BY COLLECTOR.

State of Florida, Lee County. Tax Receipt No. 36 For 1889

Description of Land.	S.	T.	R.	A.
2/3 Interest Part Lot 21	23	44	24	9

Received of T. A. Edison

For town taxes for 1889, on real and personal property, as follows:

Value of Real, $ 333.30

Personal, 100.00

Total, $ 433.30

Dated, Fort Myers, Fla August 13th, 1889

S. W. Langford

Collector of Town.

e 100 \ Send check for $100.

Myers Florida Nov 3 1889

Ans. 11/11/89

Mr T. A. Edison Orange New Jersey

Dear Sir.

I wrote you about the time you left for Paris, and thinking since your return your hands would be full of important business, have refrained troubling you. The weather is severely dry and there a good deal of sickness - some Yellow fever reports at Key West - Everything as level as I can hold it - I have not heard from Mr Gilliland for a long time. If you can spare a thought long enough to send $100 — will be glad. There had nothing charged to you - Simmons & Evans store and a dwelling burnt a few nights since -

Yours respectfully

William G. Hibble

Fort Myers

T. E. LANGFORD, Pres't
W. H. TOWLES, Vice Pres't
J. E. HENDRY, Sec. & Treas.

FLORIDA CATTLE FURNISHING Co.

WHOLESALE DEALERS IN
FLORIDA, CUBA, NEW YORK & CHICAGO
BEEF.

Ans. Dec. 10/89

Ft. Myers, Fla. Dec 21 1889

v l c n b

T. A. Edison Esqr
New York
N. Y.

My Dear Sir

I am desirous of Buying your windmill & Pump also Sand on your place here will you please let me know what you will take for it I suppose it is a/s. I have cash Demand it. Let me hear from you at once and oblige Yours truly

W. H. Towles

V. C. B

Dont want it

Sell

Ans. Dec. 10/89

Myers. Florida Dec. 3 1889.

Mr. Thomas A. Edison. Orange. New Jersey

Dear Sir

I have just received a letter from McGilliland, stating that he does not wish to bear any of the expense for repairing the wharf, as he is thinking of building one on his end of the grounds; also, that he expects to be down with a party about the middle of Jan.

I write this thinking you may like to be apprised of his intentions

Yours respectfully

William E. Hibble

Myers Florida Dec 26 89.

Mr A O Sale. Orange New Jersey

Dear Sir.

Your favor of 20 inst received - with thanks for the instructions from Mr Edison - I accept them with their literal translation and will endeavour to carry them out to the letter.

I only wish he had gone a step further and confined my services to his own individual use benefit and behoof which really should be as the work to be done on Mr Edisons premises and grounds would fully occupy my time - and I should feel better satisfied. from the fact I was sitting one one stool.

I should be glad if this meets Mr Edison's approbation - still I dont want him to think me officious.

Wishing everybody a Happy New Year

I am Sir yours very truly

William E. Hibble

Fort Myers

HENRY SAWYER, Treas. R. S. DOUGLASS, Agt.

PLYMOUTH WOOLEN CO.

MANUFACTURERS OF

FANCY CASSIMERES AND SUITINGS.

P. O. BOX 397. Plymouth, Mass. Dec 26 1889

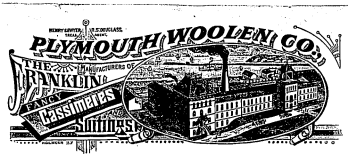
c ~ Wilkie 6/1890

Thomas A Edison Esq
Orange. N.J.

Dr Sir. Referring again to the boundary between your land and mine at Fort Myers. I enclose copy of letter from Mr Langford who has had charge of my place. This is the only information I have, as I have not been able to get word from Mr Gonzales direct. Gonzales was, I understand, the original owner of the land now belonging to both you & myself; now it is an unimportant matter, but think by some agreement between us to go on record we might have misunderstandings for our successors. I am willing to do any thing that appears fair.

Yrs truly
R S Douglass

[ENCLOSURE]

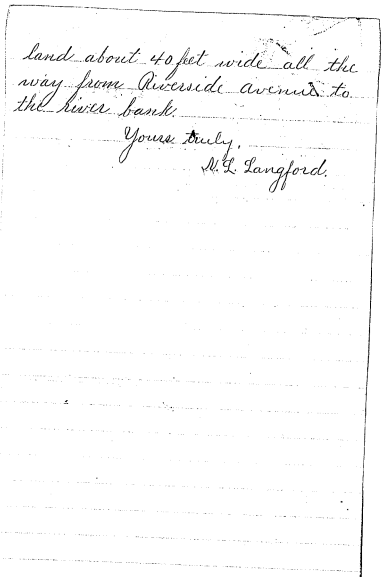


P. O. BOX 207. Plymouth, Mass., Dec. 12, 1879.

Dear Sir.-

I had a talk with Capt. Sonyaleg in regard to writing and the best information I could get was that you wanted to know something about the boundary line on the East side of your lot. He says he bought a small three cornered piece of land from the Allen Estate to make a square lot of his, which piece is included in your deed and is now partly in Edison's enclosure. From what he tells me, Mr. Edison has a strip of your

[ENCLOSURE]



land about 40 feet wide all the way from Riverside avenue to the river bank.

Yours truly,

W. L. Langford.

1889. Glenmont (D-89-48)

This folder contains correspondence, bills, and other documents relating to the furnishing and maintenance of Glenmont, Edison's home in Llewellyn Park. Included is correspondence from Edwards & Co. pertaining to the installation of a burglar alarm and bell system. Some of the documents deal with floor refinishing and covering. There are also letters from E. T. Burrowes & Co. regarding a photograph of the house to be included in their sales catalog.

All the documents have been filmed except for three printed enclosures to Burrowes & Co.'s letter of October 7.

Related documents pertaining to miscellaneous household purchases can be found in D-89-09 (Edison, T.A. - Bills and Receipts).

T.A.E. House

Furniture Makers,
Interior Decorators,
Architectural
Wood Workers.

894-896 Broadway
and 16 East Twenfieth St.

NEW YORK May 9th 1889

Mrs T. A. Edison

Dear Madam

will you please inform me if you will have the furniture that I estimated on mush hotstein & Reckerd = and also the wood floors refinished = as at the present time I can make you my best prices for the work and guarantee you satisfaction

Respectfully Yours

William F. Bayles

Have had much pleasure in [illegible] other parties dont wish to thank him

TAE-HMJC

rec'd May 20 '89

NEW YORK May 11th, 18 89

Mrs. Thomas A. Edison,

Orange, N. J.

Dear Madam:-

We have been expecting to receive a few lines from you in relation to what conclusion you have arrived at with regard to having the additional floors at your house done, and our Mr. Sayles tells us he has written to you several times on the subject.

Will you have the kindness to reply to this, and inform us what you wish to do with reference to the samples and materials sent you, thus obliging,

Yours very truly,

Herts Brothers

E.H.H.

mask

D. G. F. & Co.

New York, July 12th 1887

Mr Thomas A. Edison

Llewellyn Park.

Orange N.J.

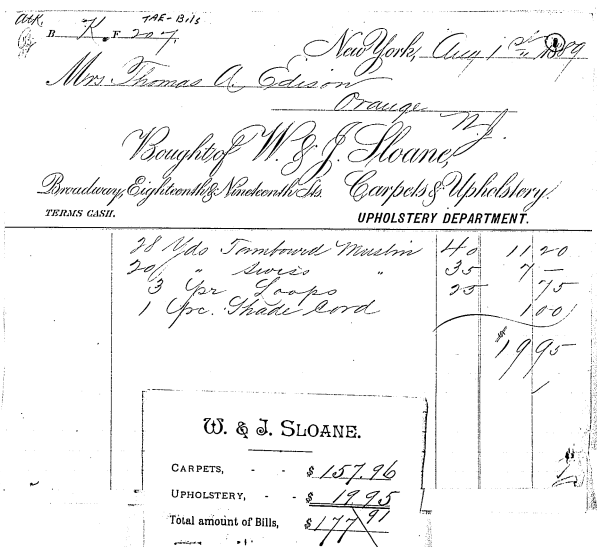
Bought of W. & J. Sloane,

Broadway, Eighteenth & Nineteenth Sts. Carpets, Rugs & Floor Cloths

TERMS CASH.

Library N.J.	30 Yds Brussels Carpet		1.50	45 00
Ernest N.J.	20½ " " Border		1.50	30 38
Med Room	50½ " Carpet & Border		15	7 84
Servants Dining room	Altering & Laying 32 Yds Wyoming Carpet		12	3 84
1st Back Hall	" 14 " Brussels "		10	1 40
	1 Yd Velvet Felting		2.00	2 00
	37 " Lining		10	3 70
	10 " Binding		6	60
	Cash time sewing 2 9/10 days		2.50	5 50
Telephone Hall & stair furnishing.	(15.0 x 6.6 10 Yds 13.0 x 5.6 9 " 7.0 x 1.0 2 Yds			
	45 7/9 Yds Linoleum		1.00	45 56
	23.0 7/9 " Cui " Border		25	1 92
	53 7/9 " Laying		10	5 32
Mens travelling expenses to measure for lay carpets, etc & fit				5 20
				$157 96

[ATTACHMENT]



Ack. K FAE-13.15
D K F 29 7.

New York, Aug 1st 1889

Mrs. Thomas A. Edison

Orange N.J.

Bought of W. & J. Sloane,

Broadway, Eighteenth & Nineteenth Sts. Carpets & Upholstery

TERMS CASH. UPHOLSTERY DEPARTMENT.

28 Yds Tambored Muslin	40	11 20
20 " Swiss "	35	7 —
3 Pr Loops	25	75
1 Pr. Shade Cord		100
		1995

W. & J. SLOANE.

CARPETS,	$157.96
UPHOLSTERY,	$19.95
Total amount of Bills,	$177.91

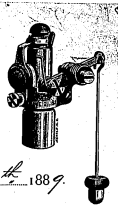
THE Home.

E. EDWARDS.
A. LUNGEN.

EDWARDS & CO.

Manufacturing · Electricians,

PATENT ELECTRIC BELLS, . . AUTOMATIC BURGLAR ALARMS,
DOOR OPENERS, . . ELECTRIC ANNUNCIATORS, ...
THERMOSTATS, . . GAS LIGHTING APPARATUS, ETC., ETC.



ESTABLISHED 1872. *OFFICE AND FACTORY:* *4th AVE. and 144th ST.,*

BRANCH, 5 & 7 DEY STREET,

NEW-YORK, *Sept 14th* 1889.

Chas. Batcheler Esq.
Orange. N.J.

Dear Sir,

Replying to yours of yesterday would say that the work at Mr. T.A. Edison's house is all finished with the exception of putting the stair matting down, which we will do on Wednesday Sept 18th next.

Very respectfully Yours
Edwards & Co.
Thos. A.

File - Home.

HERTER BROTHERS,

CABLE ADDRESS | HERBROS NEW YORK.

154 FIFTH AVENUE,

WM. BAUMGARTEN, W. G. NICHOLS.

NEW YORK, Sept 27th 1889.

Ans. Sept 28/89

Charles Batchelor Esq.
Orange. N.J.

Dear Sir.

In reply to your favor of the 26th inst: would say that there was a misunderstanding about the laying of floor in sitting room: which caused delay. Men are at the house today however, & expect to finish Tomorrow (Saturday) Our representative, Mr Hall will go out Monday to see if anything has been overlooked.

Yours respectfully
Herter Brothers.
per W.

Coachman Off

OUR NEW BRICK FACTORIES ERECTED 1885 AND 1888.
Screening Good Dwelling Houses is our Specialty.

ESTABLISHED 1873

E.T. BURROWES, W.W. COLE, F.M. STROUT.

E.T. BURROWES & CO.

MANUFACTURERS OF IMPROVED

WIRE WINDOW SCREENS

AND

SCREEN DOORS.

WORKS & OFFICE COR. SPRING & CENTER STS

Portland, Maine. Oct 7th 1889

Mr. Thos. A. Edison,

Orange, N. J.

Dear Sir;-

We are about to issue a fine new Catalogue, and, with your permission, would like to insert a cut of your house and also a short testimonial from you.

Would it be convenient for you to send us a good photograph of your house from which we could make the cut?

The Catalogue will contain cuts of thirty or forty of the finest residences in the country. The cover will be handsomely lithographed in eleven colors, and the inside work will be in the highest style of modern printing and engraving.

We will send out 25,000 of these books each year to business men who are building new residences.

We enclose a few leaves from old Catalogue, which, however, show very poor cuts and press work. The print of Mr. Dixon's house will give you some idea of the cut we would like to make of your house. We, of course, make the cut at our own expense.

If you can let us have the photograph and a short testimonial soon, you will confer a great favor. If not convenient to send the photograph, a testimonial will be acceptable. We would also like the name of your architect.

Yours respectfully,

E. T. Burrowes Co.

TAE - House

OUR NEW BRICK FACTORIES ERECTED 1886 AND 1888.
Screening Good Dwelling Houses is our Specialty.

ESTABLISHED 1870.

E.T. BURROWES, W.W. COLE, F.W. STROUT.

E.T. BURROWES & CO.

MANUFACTURERS OF IMPROVED

WIRE WINDOW SCREENS,

AND

SCREEN DOORS.

WORKS & OFFICE COR. SPRING & CENTER STS.

Portland, Maine Oct 7th 1889

Ans. Oct. 28/1889
Photo. of house sent.

Mr. Thomas A. Edison

Dear Sir;-

We made the screens for the house you now occupy in 1882 for Mr. H. C. Peddar: We have written you this mail, asking for a photograph etc. of the house.

If you can favor us, we will be greatly obliged to you.

Very truly yours,

E. T. Burrowes Co.

Respectfully referred to Mrs. Edison.

TAE - House

OUR NEW BRICK FACTORIES ERECTED 1886 AND 1888.
Screening Good Dwelling Houses is our Specialty.

ESTABLISHED 1873. E.T. BURROWES. W.W. COLE. F.M. GIROUT.

E. T. BURROWES & CO.
MANUFACTURERS OF IMPROVED
WIRE WINDOW SCREENS.
AND
SCREEN DOORS
WORKS & OFFICE
COR. SPRING & CEDAR STS.

Portland, Maine Oct Nov. 1st

Dear Sir;-

Your kind letter and also the photograph of your house are received, for which accept our sincere thanks.

We are now having made a fine cut of your house for our new catalogue.

Your prompt response was a favor that we appreciate.

Kindly send us the name of your architect.

Very truly yours,

E. T. Burrowes & Co.

TAE- House

OUR NEW BRICK FACTORIES ERECTED 1885 AND 1888.
Screening Good Dwelling Houses is our Specialty.

ESTABLISHED 1870.

E. T. BURROWES, W. H. COLE, F. M. STROUT.

E. T. BURROWES & CO.

MANUFACTURERS OF IMPROVED

WIRE WINDOW SCREENS,

AND

SCREEN DOORS.

WORKS & OFFICE COR. SPRING & CENTER STS.

Portland, Maine Nov 8th 1889

Ans. Nov. 12/89

Mr. A. O. Tate

Dear Sir;-

Your favor of Oct 23th is at hand, for which accept our sincere thanks.

Can you find out for us who is the architect of Mr. Edison's house?

Yours respectfully,

E. T. Burrowes & Co.

Say we don't know who he was

TAE-House

OFFICE OF

CHARLES E. DODD,

MASON AND BUILDER,

Estimates Given and Contracts Made for all Work.

Orange N J Nov 8 1889

Thos A Edison Esq

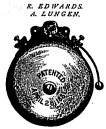
Dear Sir

Christopher Baker sunk the well at Your Residence. His Son Wm Baker has succeeded his Father. His address is 29 Cone St Orange

Yours Truly

Chas E Dodd

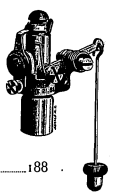
E. EDWARDS.
A. LUNGEN.



EDWARDS & CO.

Manufacturing · Electricians,

PATENT ELECTRIC BELLS, . . AUTOMATIC BURGLAR ALARMS,
DOOR OPENERS, . . ELECTRIC ANNUNCIATORS, ...
THERMOSTATS, . . GAS LIGHTING APPARATUS, ETC., ETC.



ESTABLISHED 1872. *OFFICE AND FACTORY:* *4th AVE. and 144th ST.,*

BRANCH, 5 & 7 DEY STREET, NEW-YORK, ... 188 .

Burglar Alarm Connections

1st floor

Iago Mansfield

Front door. " Connects " Main Entrance door

Reception " " Windows in Main Hall + Reception Room

Parlor. " " all Windows in Parlor.

Library " " " " Library

Dining Room " " " " Dining Room

" " " doors + drawers of Side Board " + folding doors leading to unfurnished Room

1st Hall all Doors Leading from Main Hall

Main Stairs = 3 Steps on lower + 3 Steps on upper flight

Servants dining Room = all windows in Servants dining Room

Laundry = " " " Laundry

Servants Entrance = door Leading to yard and Cellar door

Kitchen = all windows in Kitchen and large Room

Refrigirator = all doors to top

Laboratory = 1 door and two windows

Butlers Pantry = Windows in Pantry

E. EDWARDS.
A. LUNGEN.

EDWARDS & CO.

Manufacturing · Electricians,

PATENT ELECTRIC BELLS, . . AUTOMATIC BURGLAR ALARMS,
DOOR OPENERS, . . ELECTRIC ANNUNCIATORS, ...
THERMOSTATS, . . GAS LIGHTING APPARATUS, ETC., ETC.

ESTABLISHED 1872. *OFFICE AND FACTORY: 4th AVE. and 144th ST.,*

BRANCH, 5 & 7 DEY STREET. NEW-YORK, _____ 188 .

To Set Alarm

1st Throw Cut off Switch to the right and against Stop

2d See that all the small Switches are set on upper or lower bar

3d Press down on Switches on Side of Instrument will indicate what part of house has been left open by the dropping of White Tag.

Switches placed on lower bar will be disconnected by Clock, at any time for which numeral on small dial is set under the hour hand.

Switches placed on upper bar, are only disconnected at will of Operator or by throwing off Cut off Switch

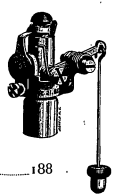
Switches to be entirely disconnected or not used are to be placed between the bars

(E. Hamm)

E. EDWARDS.
A. LUNGEN.

EDWARDS & CO.

Manufacturing · Electricians,



PATENT ELECTRIC BELLS, . . AUTOMATIC BURGLAR ALARMS,
DOOR OPENERS, . . ELECTRIC ANNUNCIATORS, ...
THERMOSTATS, . . GAS LIGHTING APPARATUS, ETC., ETC.

ESTABLISHED 1872. *OFFICE AND FACTORY: 4th AVE. and 144th ST.,*

BRANCH, 5 & 7 DEY STREET, NEW-YORK, ... 188 .

Bells

Buttons in Billiard Room, Reception Room, Play Room
Sitting Room, 2d Hall, Sunny Room, Library,
Maid's Chamber, & Guest Room. Ring to Annunciator
in Kitchen.

Main Floor

3 floor Rear, 3 floor front, Vestibule, Kitchen
Servant's Room.

Boy's Room

2d Room Button Right hand Side rings to 3d Hall

1st Hall button rings in 3 floor front Room

Front door Bell Rings in Kitchen & 3d Hall

H. EDWARDS.
A. LUNGEN.

EDWARDS & CO.

Manufacturing · Electricians,

PATENT ELECTRIC BELLS, . . AUTOMATIC BURGLAR ALARMS,
DOOR OPENERS, . . ELECTRIC ANNUNCIATORS, ...
THERMOSTATS, . . GAS LIGHTING APPARATUS, ETC., ETC.

ESTABLISHED 1872. OFFICE AND FACTORY: *4th AVE. and 144th ST.,*

BRANCH, 5 & 7 DEY STREET,

NEW-YORK, ... 188 .

Burglar Alarm Connections
2 floor

Jago marked

2d floor front. connects all Windows in Front Chamber, Toilet Room and Guests Room

Sitting Room connects all Windows in Sitting Room & Stone Room

2 floor. Rear Connects all Windows Rear part of house

2 floor Door. connects door leading from 2d Hall to Servants Hall

3 floor Door. Connects door leading from 3d Hall to Servants Hall

Silver Closet. Connects door of Closet in 2d Hall.

1889. Mining - General (D-89-49)

This folder contains correspondence and other documents relating to mining and ore milling. Many of the letters are by John Birkinbine, a consulting mining engineer hired by Edison to evaluate mining properties and to advise him on related projects. Some of the documents pertain to requests for information about Edison's mining and ore milling machinery. Included also is an undated draft contract in Edison's hand regarding a proposed Edison Iron Concentration Co. of New Jersey.

Approximately 50 percent of the documents have been filmed. The following categories of documents have not been filmed: blueprints, drawings, and descriptions of the Siemens & Halske electrolytic process; routine requests for information and agencies; letters of transmittal and acknowledgement; duplicate copies of selected documents.

Related documents can be found in D-89-11 (Edison, T.A. - Book and Journal Orders); D-89-30 (Edison Machine Works - General) and D-89-70 (West Orange Laboratory - Suppliers).

Dr Hewitt

ans. 9/1/89

THE LACKAWANNA IRON & COAL CO.

MANUFACTURERS OF STEEL RAILS.

NEW YORK OFFICE, 92 WALL ST.

SCRANTON, Pa. Jany 6th 1888.

Thos. A. Edison, Esq,
Llewellyn Park,
N. J.

Dear Sir;

I am gathering material for a paper on "Concentration of Iron Ores" to be read before a local society, and will be under great obligations to you, if you will kindly furnish me a few details concerning the experiments made on "Port Henry" and "Easton" ores with your "Magnetic Separator" and by which

a partial account of. passed on the "Iron Age" of Dec. 6th 88. The following is what I want to know:

Weight of saw ore used.

" " Concentrate made.

" " tailings "

Time of operation or treatment.

Number of tons passed through the machine.

Cost of treating a ton of the ores such as the "Pt. Henry" or the "Easton".

Yours truly

Frank F. Amsden.

P. O. Box 125.

Ore Milling.

Hotel Buchtel.

OWEN EPPLEY, PROPRIETOR.

AKRON, OHIO.

ans. 19/1/89

Akron O. Jany 10 1889.

Thos. A. Edison Esq

Dear Sir,

Mr Lewis Miller has kindly furnished me a letter of introduction to you which I hope to present in person in a few days. As stated in that letter my business for years has been with ores of all varieties and in consequence I feel a deep interest in any new method of mining or separating ores. Mr Miller informs me that you have a very much improved mode of separating iron ore from the clayey matter &c &c. I am interested in some deposits of that variety in Northern New York and trust I may be able to make some arrangement with you which will be of mutual advantage. Will you please inform me if I can see you at Orange any day next week?

Yours truly

Thos. J. Priestley Cleveland O.

Copy

Akron, Ohio Jan 10. 1889

Dear Mr Edison:

This will introduce to you an old friend and acquaintance of mine, Mr Jno A. Glidden, of Cleveland. Mr Glidden has been in the ore and mining business for many years and is well acquainted with all the ores of this locality, Lake Superior and New York. He wishes to have a good talk with you on your new method of treating ores.

Yours respectfully

Jno Lewis Miller.

JOHN BIRKINBINE,
Engineer,
No. 25 N. E. City Hall Square,
N. Juniper St.
PHILADELPHIA.

Sheets. No.

Philadelphia. January 16th. 1882.

T.A. Edison. Esq.

Orange. N.J.

Dear Sir:

I expected to go to Orange tomorrow with a party of five or six gentleman, but on account of the strom I doubt whether there will be more than three, Mr Harden of Phoenixville, who will come to see his ore tested, and two others.

I expect to arrive at the Laboratory between 12.30 and 1.P.M.

Yours Truly.

Jno S Birkinbine

On Hillard,

AMERICAN SOCIETY OF MECHANICAL ENGINEERS,
TREASURER'S OFFICE, 15 ASTOR PLACE,
NEW YORK.

Address replies to
W. H. WILEY, Treasurer.

Jan. 24th 1889

My dear Mr Yates I would like to have a talk with Mr Edison & yourself about the Mining, Road Excursion, & about the Ore Separator &c.

If there is any chance on Sunday either AM & P.M will you please telephone me at my Brothers - 185 Range. E.F.N. amilton & fix the time.

If you are in My between now & then will you call on me —

Yours truly

Wm H. Wiley

Orc/Midvale

JOHN BIRKINBINE,
Engineer,
No. 23 N. E. City Hall Square,
N. Juniper St.
PHILADELPHIA.

.....Sheets. No.....

Philadelphia, January 28th. 1892.

T.A. Edison, Esq.

Orange. N.J.

Dear Sir:

I enclose you a letter from Mr. J.W. McGennis, and had quite a long chat with him. You will remember that he was with us at the Laboratory, talking about the losses in rolling mill practice, etc, and I asked him to write us the substance of his statement, which I presume will be of interest to you.

Yours Truly.

John Birkinbine

[ENCLOSURE]

Ore Milling

W. H. WALBRIDGE & CO.,
306 So. 4th Street,
Phila., Pa.

Copy.

Phila. Jan. 24, 1889.

Jno. Birkinbine, Esq.,

Dear Sir:-

Since my exceedingly interesting visit with you to Mr. Edison's Laboratory it has occurred to me that his remarkable process of separation might be used to advantage in reducing certain losses in Rolling Mill practice which are at present endured for want of a proper cure.

In the Bessemer Department the slag from the Spiegel cupolas contains often as high as 25% Metallic Manganese, part of which is present I suppose as compound silicate and part as "Shot," which I think could be readily recovered.

Of course the amount of this slag is comparatively small, but where a mill has need of a separator for other purposes the Spiegel slag could be saved until a sufficient quantity had accumulated to make it worth while to run it through.

There is too a loss in what is known as "ladle" slag often amounting to 30% of the Spiegel added in the converter,-that is suppose 1.25% Mn. is desired in the steel to obtain this it would be necessary to add an amount of Spiegel 4% Spiegel equal to 5% of the metal in the converter (or a proportionally greater amount of a lower grade Spiegel). Of this amount of Mn. 1.25% goes into the steel and the remainder combined with various impurities goes to the slag.

Whether it would be possible to separate the Mn. in this condition I do not know, but it might be interesting to make the trial.

Then too the "Spittings" from the converter are generally carelessly swept up from ground and in most cases are mixed with a large amount of dirt which the separator could undoubtedly remove. Then in the mill the scale and mill cinder is usually collected in such a way as to contain considerable foreign matter and as all this material is sent either to the blast or puddle furnace it could be vastly improved by "Magnetic treatment." Just what the loss in in blast furnaces making Spiegel I do not know, but it is unreasonable to suppose that the slag will contain from 10 to 15% of Mn. and it would be possible to recover at least a part of this.

The Penna. Steel Co. would have all these materials and as the "Heads" in case of the Spiegel slags would be worth from $25 to $50 it would probably be worth while to make the experiment.

[ENCLOSURE]

There are no doubt many other places about individual mills where separation of desirable from undesirable could be made which would suggest themselves at once to those directly interested, and I have no doubt but that a little inquiry among mill men would develop many cases similar to those cited.

I am more and more convinced of the practicability of the separator, and only hope that W. H. Walbaum & Co. will be given an opportunity to dispose of part at least of the ore products.

Again thanking you for the opportunity you afforded me for meeting Mr. Edison and seeing his interesting plant I remain

Yours very truly,

(Signed) J. W. McDermiss.

Ens Milling Co.

Cable address, "Walbaum," Philadelphia.

General Merchandise Brokers,

METALS,
IRON ORES,
RAILROAD SUPPLIES,
Specialties.

OFFICE OF

W. H. WALBAUM & CO.,

206 South Fourth Street.

P. O. Lock Box.

Philadelphia, Jan. 29th. 1889

Thos.A. Edison Esq.

New Jersey

Dear Sir-

Reffering to a conversation some time ago when through the kindness of Mr. John Birkinbine the writer had the pleasure of seeing your ore concentrator we desire to remind you that we would be very pleased to make some arrangement whereby we could act as Agents in disposing of the products from the seperater and trust that you will bear us in mind if you decide to sell through brokers

Yours Very Truly

W. H. Walbaum & Co

per

J. W. McDennies

JOHN BIRKINBINE,
Engineer,
No. 25 N. E. City Hall Square,
N. Juniper St.
PHILADELPHIA.

Sheets. No.

Philadelphia, January 30th, 1889.

Mr. A. O. Tate,

Edison Laboratory, Orange, N. J.

Dear Sir:

Your favor of the 29th received and in reply would say that I am at work on the paper on "Iron Ore Concentration", and expect to bring the draft of it over to Orange next week and confer with Mr. Edison.

I am glad to know you have all the other arrangements in hand, if I can aid you in any way I expect to be on hand prepared to do so.

Yours Respectfully,

John Birkinbine

JOHN BIRKINBINE,
Engineer,
No. 25 N. E. City Hall Square,
N. Juniper St.
PHILADELPHIA.

Sheets. No.

Philadelphia, February 2nd 1889.

T. A. Edison, Esq.,

Orange, N. J.

ans. 5/2/89.

Dear Sir:

I am in receipt of your favor of the 30th ult, returning Mr. McGinness' letter, and will see him about the sample for your inspection. My purpose is to come over to the Laboratory next week, with the general draft of my paper on the magnetic concentration of iron ores, which I desire to submit to you before final revision before final revision. If Wednesday or Thursday will suit you I can fix my time to suit your convenience.

Yours Truly,

John Birkinbine

JOHN BIRKINBINE,
Engineer,
No. 25 N. E. City Hall Square,
N. Juniper St.
PHILADELPHIA.

Sheets. No.

Philadelphia, February 5th, 1889.

T. A. Edison, Esq.

Orange, N. J.

Dear Sir:

I received a letter from Mr W. S. Mallory of Chicago, asking for information which would assist him in placing the concentrated ore made at the Humboldt mine on the market. I have written him a long letter giving him such data as I believe will be of service to him, on the presumption that such information would incidentally come to you. I merely write this to you so that you may know what I have done, and so that if I am in error I may be advised not to repeat the mistake.

Yours Truly.

Jno Birkinbine

JOHN BIRKINBINE,
Engineer,
No. 25 N. E. City Hall Square,
N. Juniper St.
PHILADELPHIA.

Sheets. No.

Phila Feby 9/89

Mr T. A. Edison

I was greatly disappointed that I could not get to the Laboratory to day - I will go over to N.Y. on Monday - and come out to Llewellyn Park in the afternoon - If you can not see me and go over my Paper please telegraph me Monday by 1 P.M. to Jno H. Sheerer 15 Park Row N.Y. I have the Paper mislaid - except as far as it directly pertains to your mill

Yours, J. Birkinbine

THEO. A. BLAKE,
CIVIL AND MINING ENGINEER,
NEW HAVEN, CONN.

Johnson
Can we post it
to Edison up
running by the 20th

New Haven, July 9th 1869

Thos. A. Edison Esq.
Orange - New Jersey -
Dear Sir:

I hoped to call upon you yesterday but couldn't get the time - I expect to be in Orange next week - you to send a Small Lab. Crusher - Middletown has Machine for fine Crushing - and have it running at time of meeting of Institute of Mig Engineers on the 20th - Mr W. S. Mallory - & Mr John Bellamy have both Expressed a desire to see it and I think you would be pleased also - I have been hoping to hear from you or Subject of Crushers -

The Number of Pulley on Machine is 12" - 2½" face and Runs now at 600 Rev. per Minute - Can I arrange with you to do it -

Very Truly Yours
Theo. A. Blake -

This is claimed to be the work of Edison
I have seen them in operation - Ask a matter for Mr Edison to decide

JOHN BIRKINBINE,
Engineer,
No. 25 N. E. City Hall Square,
N. Juniper St.
PHILADELPHIA.

Sheets. No.

Philadelphia. February 12th. 1889.

T. A. Edison, Esq.

Orange. N. J.

Dear Sir:

I regret that I was unable to see you yesterday but think that Mr Tate will explain the suggestions I made about the paper. Had I not expected to confer with you personally I would have written off a description of the apparatus at the Laboratory. I trust that you will feel free to criticise the paper in any way, its object is to discuss magnetic concentration and your concentrator. I suggested to Mr Tate that if you thought it advisable I would like to have you write up the operation of the different machines from the standpoint of an electrician, either as a separate paper, or that it be embodied in this paper of which we could take the authorship jointly as you prefer.

I am very sorry to learn that your work in the ore milling department is interfered with by the illness of Mr Dickson. If my presence in Orange will be of any assistance to you in arranging a programme for the 20th, or in looking after any details I can arrange to come over any day but tomorrow, and will be gratified be of service.

Yours Truly,

Jno Birkinbine

JOHN BIRKINBINE,
Engineer,
No. 25 N. E. City Hall Square,
N. Annex St.,
PHILADELPHIA.

.....Sheets. No.....

Philadelphia, February 13th, 1889.

O. E. Tate, Esq.

Edison Laboratory. Orange. N. J.

Dear Sir:

By same mail I send you some copies of the description of the Edison Magnetic Separator, which appeared in the Iron Age, and which I thought would probably be useful to you at the meeting of the American Institute of Mining Engineers, at the Laboratory.

Yours Truly.

John Birkinbine

Re Milling

Geo. J. Northrop, M. D.
206 East Ridge St.
Marquette, Mich.

Feby 14th 89

Thos. A. Edison

Dear Sir

I am anxious to learn something about the Electrolytic process of separating and refining Copper and would be glad to know what books to refer to for information. We know that Copper is one of the best Conductors of Electricity and that it is not attracted by the Magnet like iron and I would like to devise some way of working and separating Copper by a dry process instead of putting the Matte in solution as I understand that they do - Cannot you manage by Electricity some process by which Copper and Silver can be obtained pure from the Matte or separated from other foreign material whether it be broken or pulverized Stone or other material?

Yours very truly

Geo J Northrop

G. A. LONGNECKER,
MINER AND SHIPPER OF
MAGNETIC IRON ORE,
MECHANICSBURG, PA.

Mechanicsburg, Pa. Feb. 18th 1889

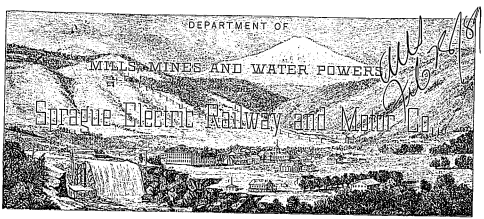
Edison Machine Works.
19 Ray St.
New York.

Dear Sir:-

Can you furnish one 4 magnetic iron ore separating plant, ("Edison" system) capacity - 200 tons crude ore per day, & how soon could the plant be in operation?

Yours truly
G. A. Longnecker

Drill - Edison



OFFICE, 18 AND 18 BROAD STREET,

New York, Feb. 18th, 1889

Thomas A. Edison, Esq., -(CONFIDENTIAL)

ORANGE, N. J.

Dear Sir:--

There is a strong corporation, both financially, and in business talent, being formed in this city, to furnish electrical drills for mining uses. They have already secured control of the most effective Diamond Rotary Drill in the market, for all prospective purposes, etc.

They are now in pursuit of a percussion drill, that shall meet the requirements, and occupy the position, in rock-drilling, in connection with heavy mining, tunnel work, etc, that is now held, by their Diamond Drill, in another field.

It has occurred to me, that you might be willing to offer them terms, upon which in connection with their present drill, they could secure the one that you have nearly perfected. I

have been asked, to be the Executive Director, of this Corporation, and shall most likely, accept the post. If you so desire, no persons but ourselves, shall know the nature of your reply to me, as none but ourselves know the tenor of this communication. It is a matter of good deal of business importance, that I have a pointer that shall give me a direction, in this matter.

I could to-day insure a sale of 500 electric percussion drills, if for the efficiency that I believe yours will be, at prices ranging from $300.00, to $500.00 each. -I met Engineers at the Laboratory yesterday, one of whom wishes to install a plant, that will require at least $100,000. of electrical equipment. I enclose you blue-print of another installation, where we shall require about $25,000.00 worth of drills. I would be very glad, if the problem could be solved by you, so far as the percussion drill is concerned, by giving me the definite assurance, of what I could rely upon, in the matter.

Awaiting your early reply,

I am, Truly yours,

B. A. Eustis

The Corporation I refer to, is outside any Company with which I have, or have had connection

JOHN BIRKINBINE,
Engineer,
No. 25 N. E. City Hall Square,
N. Juniper St.
PHILADELPHIA.

Sheets, No.

Philadelphia, February 19th. 1889.

T. A. Edison, Esq.

Orange. N. J.

Dear Sir:

I have delayed writing to you expecting every day to receive from you the paper which I prepared for the meeting of the American Institute of Mining Engineers tomorrow and left with Mr Yates, for your revision. It has not yet come to hand, and I therefore do not know your wishes. Mrs. Birkinbine's health has been such that I have been detained in the City, but I hope to be able to come over to the Laboratory tomorrow with the party of mining engineers.

I have made some modifications to the paper and when I get to the Laboratory a few minutes conference will probably make everything satisfactory.

Mr. McGinness of W. H. Walbaum & Co, informs me that he has the mill scale, cinder ready, and has arranged for convertor spittings, convertor pit slag, and spiegel cupola slag, which you desired to experiment with.

Yours Truly.

John Birkinbine

JOHN BIRKINBINE,
Engineer,
No. 23 N. E. City Hall Square,
N. Jumper St.
PHILADELPHIA.

Chas
Sheets. No.
Philadelphia, February 21st, 1889.

T. A. Edison, Esq.
Orange, N. J.

Dear Sir:

I regret that I had so little opportunity to confer with you about my paper. I therefore spoke extemporaneously so as to take time to revise the matter with you for publication. I should very much like to spend several hours with you in this revision so that the paper when it goes to press will be truly valuable to you. There will be an edition of about 1800 published for members, exchanges, etc, and in addition some 1400 will be printed to be bound in with the finished Volume of Transactions. As a member I have the privilege of ordering as many author's copies as I choose at the cost of printing. It seems to me that by putting this paper in A.1. shape it can be widely distributed to all the iron ore mines, blast furnaces, etc, and present concentration to them in such a light as will be advantageous.

I therefore think it very important that we take up the matter in detail together. If it will suit you I will come over some time next week. We should embrace a discussion of magnetism as it affects the action of your own and other separators.

I think it well also to sketch in a general way your investigations of various forms of separators, to show that your present arrangement is the result of thorough study of the various methods proposed by others.

Every one was delighted with the Concentrator, and the visit to the Laboratory in general. I think now is the time to make the results generally known.

Yours Truly.

Jno Birkinbine

Form No. 1.

THE WESTERN UNION TELEGRAPH COMPANY.

This Company TRANSMITS and DELIVERS messages only on conditions limiting its liability, which have been assented to by the sender of the following message. In consideration of delivery of Unrepeated Messages, beyond the amount of toils paid thereon, and the company will not hold itself liable for errors or delays after sending the message.

This is an UNREPEATED MESSAGE, and is delivered by request of the sender, under the conditions named above.

THOS. T. ECKERT, General Manager. NORVIN GREEN, President.

NUMBER	SENT BY	RECEIVED	CHECK
29	W.	10 pd	

Received at ORANGE, N. J. 329

Dated New York 5 Mch 5 1889

To Thomas A Edison

Orange

Will arrive four thirty with iron men to see concentrator

Jno. Birkinbine

Phila Mch 9/87

Mr. T. A. Edison

Dear Sir

Enclosed I send you copy of paper for Am. Inst. Am. Institute of Mining Engineers for your criticism. I will be over to see you in a few days and will go over any thing you desire to add. I wish you would insert in the Hawks the Volts and Amphers

Keep this copy until I call

Yours truly

J. McKendrick

Report

CENTURY CLUB
109 EAST 15TH STREET.

New York 2/1/89

New York, Mar. 22, 1889.

Thomas A. Edison, Esq.

Dear Sir,

While talking notes about Woodbridge I learned that some years ago you reopened and operated a copper mine in that township. I should esteem it a favor if, at your early convenience, you could inform me whether the mine is still worked.

Sincerely yours

S. G. W. Benjamin

THEO. A. BLAKE,
CIVIL AND MINING ENGINEER,
NEW HAVEN, CONN.

2 Le

Feb. 26th 1889

Thos. A. Edison Esq.
Orange. N. Jersey.
Dear Sir:

I had a chance immediately to send a multiple jaw Cracker to Paris Exposition. The time was so short that I could ask no one personally for it, so took the one I had sent to you. It was intended merely as an illustration. And I hope to have one ready for a larger one from you.

Very truly yours
Theo. A. Blake.

JOHN BIRKINBINE,
ENGINEER,
No. 25 N. E. City Hall Square,
N. JUNIPER ST.
PHILADELPHIA.

Philadelphia, Apr 13 1889.

Mr T. A. Edison
Orange N Jersey

Dear Sir - I returned home tonight from making a four days visit of the Ball-Rotor and Wires from Separators at Port Henry My Rate considerable data which I feel sure will interest you My present programme is to go over to the Laboratory Wednesday reaching there at noon - If this does not suit you please advise me Yours Truly

JBirkinbine

Ore Milling - Canada

JOHN BIRKINBINE,
Engineer,
No. 23 N. E. City Hall Square,
N. Juniata St.
PHILADELPHIA.

Sheets. No.

Philadelphia, May 3rd, 1889.

T.A.Edison.Esq.

Orange. N.J. ans May 6 '89

Dear Sir:

I have just returned from quite an interesting visit to Canada, which I feel disposed to believe is the initiative measure for the erection of blast furnaces for the use of magnetic iron ore. The deposit which it is proposed to work is very rich ore, the drawback being sulphur, but as soon as an industry is established I think there are a number of lean ores in the vicinity which can be made available by concentration.

I had an opportunity while in Ottawa to describe your separator to Sir John.McDonald premier.Hon Mackenzie Bowell Minister of Customs.Hon.W.G.Perley M.P. Sir James Grant and others, and I find that they are to a certain extent familiar with the experiments you have been making with the Canadian McFee ores.

I regretted very much that I was unable to see you before going to Canada as I wished to advise you as to the results of the experiments which were made with the Monarch and Wenstrom machines at Port Henry. I feel confident that the Edison machine will do what neither of the others have done, and I would strongly urge upon you making such an experiment as would demonstrate this. I regret the misunderstanding which seems to exist in your mind regarding Messers Witherbees, Sherman & Co., and say frankly to you that I know of no one ~~with~~ with whom I would prefer carrying on operations than that firm.

I have not yet received the proof of our paper on "Iron Ore Concentration" but as soon as it comes I will bring it over and confer with you, or I will come over at any time when I can be of service.

A letter has been referred to me from a party in Blacksburg S.C. who are desirous of becoming posted as to a crushing plant for concentrating ores by the use of your machine.

Yours Truly,

John Birkinbine

Ore Milling

Cable address, "Walbaum," Philadelphia.

Recd. March 11/89

General Merchandise Brokers,

METALS,
IRON ORES,
RAILROAD SUPPLIES,
Specialties.

OFFICE OF

W. H. WALBAUM & CO.

206 South Fourth Street,

P. O. Lock Box.

Philadelphia, May 10th. 1889

Laberatery of Thos. A. Edison Esq.

Ore Milling Dept.

Gentlemen

We have recently received an inquiry from South Caro-
-lina in regard to the cost of a plant complete for concentrating.
We quote from their letter as follows - "A large percentage of our
ores are lean and will consequently not bear shipment. They are
feung in Talcose state and are both hard and soft. - - - - -
What will be the entire cost of plant to concentrate 50 tons daily
also increased cost to concentrate 100 to 200 tons daily and what
do you estimate the working cost of separation assuming ore deliv-
-ered at seperater. - - - - - - Include cost of motive power in esti-
-mate and give H.P. of engine required to operate 50, 100 and 200
ton plants."

Kindly give us this information and we will send it forward prompt-
-ly to our correspondents. We think we might be able to sell quite
a number of plants and would be pleased to hear from you in regard
to some arrangement whereby we either might represent you in a cer-
-tain district or receive a commission on any sales negotiated
through us.

We have called upon Mr. Birkbinbine several times recently but have

We could ship from Cobar Samples

We might guarantee that the ore will run as per sample sent, but we could not guarantee a shipment of 200 tons per day for 12 months

Dundas

We do not sell the machinery as we have gone into the business of Concentrating ourselves - We have two Mills in Operation and several others in Course of Erection, We only undertake to erect a mill and Concentrate for a fixed sum per ton providing the supply of ore, available market + Conditions for permanency is obtained - to give approximate Costs we should have all the data such as location mine, quantity of ore, average assays, distance to furnace, freight etc - of course we pay a liberal Commission to parties who helps us consummate any lucrative Contracts, Edna

Cable address, "Walbaum," Philadelphia.

General Merchandise Brokers,
METALS,
IRON ORES,
RAILROAD SUPPLIES,
Specialties.

OFFICE OF
W. H. WALBAUM & CO.,
206 South Fourth Street,

P. O. Lock Box.

Philadelphia, May 10th. 1889

L.T.A.E. No.2

been unfertunate in choosing times when he has been out of the city

Awaiting your reply we remain.

Yours Very Truly.

W. H. Walbaum & Co

JOHN BIRKINBINE,
Engineer,
No. 25 N. E. City Hall Square,
N. Juniper St.,
PHILADELPHIA.

Ans. May 13/89

Philadelphia, May 11 1889.

Mr T. A. Edison

Dear Sir I have the proof of our joint paper on Iron Ore Concentration & Rolls & I will read it over together - I want to start for Duluth next week if you could give me an hour Monday afternoon I will run over to see you & telegraph me, as I have this and other matters about which I want to confer with you Yours truly

John Birkinbine

Die Milling - The

Form No. 1.

THE WESTERN UNION TELEGRAPH COMPANY.

This Company TRANSMITS and DELIVERS messages only on conditions limiting its liability, which have been assented to by the sender of the following message. Errors can be guarded against only by repeating a message back to the sending station for comparison, and the company will not hold itself liable for errors or delays in transmission or delivery of Unrepeated Messages, beyond the amount of tolls paid thereon, nor in any case where the claim is not presented in writing within sixty days after sending the message.

This is an UNREPEATED MESSAGE, and is delivered by request of the sender, under the conditions named above.

THOS. T. ECKERT, General Manager. NORVIN GREEN, President.

NUMBER	SENT BY	RECD BY	CHECK
43	Orl	J 29	Collect

Received at ORANGE, N. J. June 12 1889

Dated Philadelphia June 12

To T. A. Edison

Would like to stay here till Saturday how would suit Monday answer. Telegraph my wife say that I want to finish work here am getting good rest Answer Edison.

P. O. Box 197

Fredk Victor & Achelis,
66 & 76 Leonard Street,

New York, June 17th 1889

Mr. S. D. Edwards
19 Dey Street

Dear Sir

Mr. L. C. Bismuth
Secretary & Manager of our
New Jersey Steam Mining Co.
Down Tif
has informed us that you
had approached him looking
for figures, at what rate
if low our Co. would be
willing to do some mining
for you.

Before we give you an
estimate of the cost, we
should like to be informed
how you intend to make
payments for the cost
of mining, & in case of

P. O. Box 197

Fredk Victor & Achelis,
66 & 76 Leonard Street,

New York, _____ 188_

bi-monthly settlements
what security you should
be willing to offer to
our Co.

Yours very Truly
Fred Victor
Treas
of New Jersey Steam Mining Co.
P O box 197
New York

Hub. Visitors

Form No. 1.

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THOS. T. ECKERT, General Manager. NORVIN GREEN, President.

NUMBER	SENT BY	RECD BY	CHECK
55			

Received at Orange, June 19 1889

Dated

To T A Edison,

Expect me with party from Texas at nine Thursday morning

John Birkinbine

JOHN BIRKINBINE, Engineer, No. 25 N. E. City Hall Square, N. Juniper St. PHILADELPHIA.

Philadelphia, June 26th. 1889.

T.A.Edison.Esq.

Orange. N.J.

Dear Sir:

Mr Birkinbine has requested me me to inform you that two gentlemen who are largely interested in the Lake Superior iron ore districts, wished to see your ore concentrating machine, and if it suits their convenience he will bring them over on Saturday, inpase that date is not satisfactory, then at some subsequent time when they can go.

Yours Truly.
F. L. Bilby

On mile
WESTMINSTER,
W. S. SCHENCK,
SIXTEENTH STREET,
EAST OF UNION SQUARE.

NEW YORK, June 26 1889

Mr T. A. Edison
Dear Sir I have
seen Mr Arny & Mr Adams
and arranged to bring them
out & see the Circulator
Saturday morning,
If I find I can get
them out before that I
will telegraph you
Yours Truly
Jno Barkhuliu

JOHN BIRKINBINE,
Engineer,
No. 25 N. E. City Hall Square,
N. Juniper St.,
PHILADELPHIA.

Philadelphia, July 2n.d 1889.

Thos. A. Edison, Esq.

Orange. N.J.

Dear Sir:

I regret that I did not see you when at the Laboratory on Saturday and I would have waited had I been certain that I could have seen you. My expectation is to go West about the 15th of the month and as you stated that you proposed after you had the Bechtelsville plant in operation making a commercial test of say 50 tons or so of Port Henry ore, I would like if you still desire to have it done, to arrange to have the ore sent there prior to my departure. I think an arrangement could be made whereby the resultant concentrate could be disposed of, so as to compensate you for running it through the works., and have the nre return something to Messers Witherbees, Sherman & Co.

Yours Truly.

Jno Birkinbine

Photocopy

JOHN BIRKINBINE,
Engineer,
No. 25 N. E. City Hall Square,
N. Juniper St.,
PHILADELPHIA.

Ans. July 8/89

Philadelphia, July 8th. 1889.

T. A. Edison, Esq.

Orange. N.J.

Dear Sir:

Messers Sherman & Co. have sent me the proof for final revision of the paper on "Iron Ore Concentration" upon which your name and mine appear as joint authors, and stated that if I desired extra copies I must enter the order at once. I have ordered 100 for distribution among my friends, and will gladly supply you with part of mine, but if you wish any number please let me know at once and I will put in the order. We only have to pay for the cost of printing and the paper

100. for me

E

Yours Truly.

Jno Birkinbine

TREASURY DEPARTMENT,
THIRD AUDITOR'S OFFICE,
WASHINGTON, D. C., July 11, 1887

Thos. J. Fox. Esq.
44. Wall st.
N.Y.

Dear Sir -

Judge A. G. Snyder tells me that you are interested in some kind of a machine for sewing gold. I write to say that if you would send me a circular or write me a description of the machine & giving price &c.

Very respectfully.
S. A. M. Squire

I have written to him that the machine is not ready. Yours Fox

JOHN BIRKINBINE,
ENGINEER,
No. 25 N. E. City Hall Square,
N. JUNIPER ST.,
PHILADELPHIA.

Philadelphia, July 13th, 1889.

T. A. Edison, Esq.

Dear Sir:

As I find that it is essential that I attend a meeting in Duluth next week, and as I may be somewhat detained, I fear that I will not have an opportunity of seeing you before you sail for France, which I understood you would do on August 1st... I therefore wish that you would advise me as to any matters which you think I should give attention to especially doing your absence, and also state if you wish me to communicate with anyone in your stead while you are away.

I am investigating a chance for concentration which strikes me favorably in Maryland, and am promised maps, and samples of the material. If the deposit

JOHN BIRKINBINE,
ENGINEER,
No. 25 N. E. City Hall Square,
N. JUNIPER ST.,
PHILADELPHIA.

Philadelphia, 1889.

turns out as reported to me, it will pay someone to take up the properties and work them. The ore is reported as occurring in crystals of magnetite in a soft sandstone, which disintegrates so readily as to cause considerable deposits of magnetic sands along the stream beds. As soon as I get all the data in shape so that you can be well posted I will present it to you for your consideration.

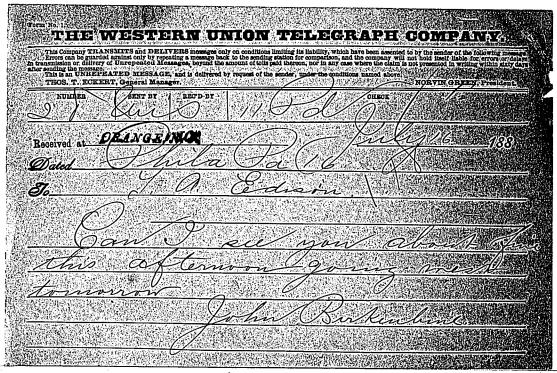
I spent a day lately at the Cornwall Mines, and had a long talk on concentration with Mr. Boyd the Manager, who was rather skeptical upon the economic results. I think I demonstrated to him however, the fact that there was a decided advantage to the Cornwall Ore Banks Co., in concentrating their leaner ores, and he finally stated that he would like to have another test made, and I suggested that it would be well to have a test made on a thoroughly commercial scale, passing

JOHN BIRKINBINE,
ENGINEER,
No. 25 N. E. City Hall Square,
N. JUNIPER ST.,
PHILADELPHIA.

Philadelphia, 1889.

tons instead of pounds, and that he should be present to see the operation. What would you think of the plan of having him send say 10 tons of each grade of ore[this would be 40 or 50 tons in all] to the Bechtelsville plant, passing it through at a time when Mr. Boyd could be there, after you had made your preliminary experiments, the resultant concentrate being sold to the furnaces, and whatever was received above the freights, and cost of concentration to be divided between the Cornwall Ore Banks Co., and yourself, or if you prefer paid to the Cornwall Ore Banks Co. I think this would demonstrate that concentration would pay, and at Cornwall the process could be carried on on a very large scale. If you will let me know your wishes in the matter I will endeavor to work a plan up while you are absent. You never advised me as to the test of the Port Henry ores at Bechtelsville.

Yours Truly,



THE WESTERN UNION TELEGRAPH COMPANY.

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THOS. T. ECKERT, General Manager. — NORVIN GREEN, President.

NUMBER | SENT BY | RECD BY | CHECK

Received at ORANGE, N.J. 188

Dated

To Mr. A. Edison

Can I see you about [illegible] this afternoon I go to [illegible] tomorrow

John Birkinbine

EDISON LABORATORY.

TELEGRAM.

July 16th 1889

From

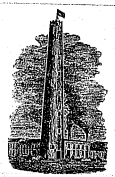
To John Birkinbine

25 N. E. cor. Fall Square & Juniper Street

Philadelphia

I will see you this afternoon.

Edison.



Wythe Lead and Zinc Mine Company.

—MANUFACTURERS OF—

Spelter, Bar and Pig Lead, Drop and Buck Shot, all sizes,

—AND DEALERS IN—

GENERAL MERCHANDISE.

Post Office Address, AUSTINVILLE, WYTHE CO., VA. (JOHN C. RAPER, *Agent.*)

Austinville, Va., July 17th 1889.

Thos A. Edison Esqr.
Bechtelville Pa.

Dear Sir. I happen to notice in a Lynchburg Va paper that you have invented an ore seperator to seperate iron from accompanying gangue. In our mine here we have Galena, Zinc blend & brown hematite iron ores blended together & we can make a very good seperation of the ores with exception of the Carbonate & silicate of zinc, the specific gravity the zinc & iron ore being so nearly equal, we cannot make a perfect seperation on our jigs. Do you think your magnetic treatment would make a perfect seperation of the carbonate & silicate of zinc from the brown hematite iron ores? Hoping to hear from you at an early date we are Yours truly J. C. Raper Agt

Charles Mayer, President Hiram Robinson, Vice President Caleb Symons, Manager

The Bristol Iron Company, Limited.

HEAD OFFICE
OTTAWA, ONT.

Bristol Mines P.O. Pontiac Co. Que. 20 July 1889

Ans. July 25/89.

Thos A. Edison Esqr
New Jersey
U.S.A.

The process is for
Concentrating Iron ores
from 30 percent to 65 @ 67
per cent & Eliminating phosphorus
& Sulphur, we are ready for supplying

I see by the Canadian Mining Review that you have a patent for the desulphurizing of magnetic Iron ores.
My reason for addressing you is this. We have two three Calcine Kilns two from Plans of the Taylor Longenbach and one Similary to the Three Colby ones which we use Gas fuel. Produced from coal. We take from three to five tons of coal. to one hundred tons of Iron ore. properly Calcined. Four miles from the mine A Splendid water Power can be had. to any extent desired. Now if agreeable our Location is good for such an Agent. as Electric process.
1st is your process effective. 2nd Can it be applied to above Kiln 3rd what would be the cost. to Quote the same heat as say 60,000 feet of gas. or one ton of hard coal.
4th what would. the cost of Plant be we providing the water Power. 5th would it be advisable to have Sufficient added. to work our machinery at mine also. it take about 200 H.P. to run our Hoisting Engine Air Compressor Pumps etc.
An Answer will much oblige
Yours Truly
C C Symons
Manager

The smallest size Mill we
is 200 tons Crude ore Capacity per

Ore milling

THE NATIONAL TROTTING ASSOCIATION.

OFFICE OF THE SECRETARY.

Ans. July 25/89

Hartford, Conn., July 22 1889

Thos A. Edison Esq
Menlow Park
N.J

Send Sample
Mr Chew Com[illegible]

Dear Sir—

I notice in the papers some acct of a new method of separating ores.

If your device or discovery is protected by patent will you kindly furnish me with sufficient details to enable me to judge of its applicability to a particular ore from some Colorado mines in which I am interested. Also approximate cost of reduction plant by your method & your terms of royalty.

Very Truly Yours.

Chas E Gager
Lock Drawer 10
Hartford Ct.

JAS. R. P. MILLER, PRES'T. & TREAS'R.
A. W. COE, SECRETARY.
WM. H. PRATT, SUPERINTENDENT.

OFFICE OF Conn. Cen. 1/89

DEADWOOD CENTRAL RAILROAD.

Over

Deadwood, D. T., July 22 1889

Thos. A. Edison Esq

Richfield Ohio

Dear Sir

Noticing in N.Y. World you have an invention for concentrating Iron ore. I write to ask your opinion regarding its working on White Pyrites.

I am quite largely interested here in several Quartz Leads which carry about 16oz Gold & 6oz Silver pr Ton and a large amount of Pyrites. The Gold & Silver is in the Pyrites & we want a process to concentrate these for smelting. Please inform me if you think your invention will do it & if so what it would cost us to use it

Respectfully Yours

A W Coe

Say my process is to work
gold pyrites without smelting
am just going to Paris Fri &
be back in Oct & will
then further correspond with
you {

JOHN BIRKINBINE,
Engineer,
No. 25 N. E. City Hall Square,
N. Juniper St.
PHILADELPHIA.

Philadelphia, July 23rd. 1889.

T.A.Edison.Esq.

Orange. N.J.

Ans. July 25/89

Dear Sir:

Mr.Birkinbine has requested me to send you a copy of Mr.Dewey's letter, which I enclose; and say that he will delay a reply to the letter until he knows what you desire him to say. You can either advise him at this office or at the Spaulding House, Duluth, Minn.

Yours Respectfully.

F. R. Bitler.

We have a
Concentrator which
will work the Oregon
Sea Sand

[ENCLOSURE]

JOHN BIRKINBINE,
Engineer,
No. 23 N. E. City Hall Square,
N. Juniper St.
PHILADELPHIA.

COPY. ..... Sheets. No. .....

Paris. ~~Philadelphia~~, July 6th. 1889.

John Birkinbine. Esq.

Philadelphia. Pa.

Dear Sir:

In your article contributed at the February meeting to the "American Institute of Mining Engineers" you mention incidentally on page 16, that the "Edison Concentrator" "with a modification" has been used in treating gold ores.

As a fellow member of the above Institute, and as an old "miner" I take the liberty of asking you where, and on what class of gold ores the concentrator was used, and also if it proved successful. I know at present of but one class of so called gold ores where its use might be of advantage, I refer to the so-called "black sand mines" found on and near the sea coast of California. The fine black sand on the beach and further in the interior in layers from one foot to six feet in depth, contains quite an appreciable quantity of very fine gold and a large quantity of magnetic iron.

Some years ago I took over from France a machine called the " extractor Varin" consisting of two bands, arranged one above the other, containing permanent magnets, and working much as the Wenstro Separator, except that the magnetic and adhering particles were swept off the barrel by a revolving brush. It worked well, but necessitated the drying of the sand, which cost too much to make the matter practical. Edison's separator is just what is needed for that, but we have many other ores which when crushed need separating or concentrating before being treated, and as I desire to keep up with all the latest inventions or discoveries of the day in these particulars I have written this note for a little information from you as to what class or character of ores it had been applied.

I am temporarily in Europe for the benefit of my family, and while here am looking into all that is scientific and useful, especially in the mining line.

Signed. Yours Truly.

Wm. P. Dewey.

ADDRESS IN REPLY,
"UNITED EDISON MFG. CO."

UNITED EDISON MANUFACTURING COMPANY,

DEPARTMENT OF
CENTRAL STATIONS,
(IN TOWNS UP TO 50,000 POPULATION,)
AND
ISOLATED PLANTS.

65 FIFTH AVENUE,

NEW YORK, July 29, 1889.

Ans. Aug 5/89.
Say to parties that I
will go into the matter
on my return about
the middle of August
when we will have our mill
in full operation in Penna

Thos. A. Edison, Esq.,

Llewellyn Park,

Orange, N. J.

Dear Sir:--

I enclosed you herewith a letter of enquiry from one of our agents, asking for information about your process of magnetic ore separarion. Soon I can give exact data as to cost -

If you will give me as complete information as convenient, I will be able to answer such enquiries without having to refer future ones to you.

Please give me a general idea as to the process and method of handling the business which you wish followed.

Truly, yours,

A. Ward Leonard

Gen'l Manager.

[ENCLOSURE]

FRANK A. MULLANY,
SELLING AGENT.

No. 132 RICHARDSON STREET,
COLUMBIA, S. C.

THE EDISON UNITED MANUFACTURING COMPANY,

NEW YORK.

Columbia, S.C., July 27th 1889.

Ans'd Aug 5th 89

United Edison
Mr Edison Consolidated Mfg. Co.,

No. 65 Fifth Avenue, New York.

Gentlemen:

At the request of Col. A. H. Haskell, Presdt. Loan and Exchange Bank of this city, I write for information regarding Mr. Edison's process for separating iron ore.

Is the process equally applicable to magnetic and non-magnetic ore? Will water power suffice as a motor? Is heat necessary at any stage of the process? Is the machinery and apparatus now on the market? Is it costly? Is it expensive to maintain? Is it cumbersome? — These are a few of the questions asked me. Any information you can furnish will be appreciated.

There are in the State very considerable iron fields, but much of the difficulty in working them is caused by the absence of coal. On the other hand there is convenient water power in abundance. Naturally, therefore the published description of Mr. Edison's discovery has attracted much attention among the owners of property containing iron ore.

Col. Haskell is especially interested, for

[ENCLOSURE]

is a capitalist and gentleman of standing, as well as a believer in progress. He is the same gentleman with whom I have lately had some conversations looking to the installment of a central station plant at his cotton mill. I have strong hopes of being able to do some business with him after a time.

Yours truly,

Frank A. Mullaney

Charles Magee, President Hiram Robinson, Vice President Caleb C. Clymer, Manager

The Bristol Iron Company, Limited.

HEAD OFFICE
OTTAWA, ONT.

Bristol Mines P.Q. Rail Que. 30 July 1889

Thos A Edison Esqr
Orange.

Ans. Aug 5 –

Dear Sir

Your favr 25th inst. from. What I saw in the papers was under the impression you roasted the ore. to eliminate the Sulphur with Electricity or in other words burnt it out. Ours the Magnetic ore carry from 62 to 67 % of Iron practicaly no Phosphorus ore by thousands with from ½ to 3 % of Sulphur, and I wish you before we have three miles. for Extracting out the Sulphur by the use of gas. it cost us now about 60 ¢ per ton to get rid of the Sulphur. to say 2% or of ours we have a very large body of ore. but. as you can see rich in Iron and almost without Phos. we are down in one Slope about 150 ft. we have expended about $20,000 in Purchase Development & Transport. to-ore.

And when I saw in the papers about your process I had hoped that we could apply your agents here to advantage but from what I can judge your plan is more for the making poor ore rich in Iron by removing the Silica than A. & Sulphurizing only.

But I would be pleased to hear from you to know how you reduce to obtain Sulphur & at the Cheapest price per ton our ore here is of as

Charles Mayes, President Hiram Robinson, Vice President Caleb C. Symmons, Manager

The Bristol Lime Company, Limited

HEAD OFFICE
OTTAWA, ONT.

Bristol Mines P.O. P.Q. Que. 18

nature and very easy to crush. if not by heat by what process do you dispose of the Sulphur in our ore could Molechorchy be used as a heating agent in place of coal gas. I dont understand this matter but it seem to me it could be so used to an advantage. What wile he Bill cost to heat say ten tons per 24 hours An answer will much oblige

Yours Truly
C. C. Symmons Manager

P.S

Any information you can give consistently will be thankfully received C.C.S

ore milling

Referenzen:
Die Banken und leitenden Geschäftshäuser der Stadt York.

GEO. E. SHERWOOD,
Consultationen in Englisch und Deutsch.

REFERENCES:
The Banks or any of the leading business men of the City of York.

4th Ward Alderman,

OFFICE, No. 8 SOUTH GEORGE STREET,

York, Pa., Aug. 2d 1889.

Thomas A. Edison Esq,

Respected Sir.

Aug 19/89. Some ten days ago I observed in the leading Journals of Philadelphia the announcement of a new invention by you relative to the extraction of metal from the original ore. — I forward to you a specimen of the iron ore extracted by a machine ~~caveated~~ by me some six years ago. — I assume that your invention rests upon the same principle and that a comparison of the machines may lead to valuable improvements. — Poverty prevented me from pressing my claims for a full patent, and the same cause at that time, compelled me to drop further labor on the machine. — The specimen send you was extracted from ore taken from the Cricklemire Mine supposed to

contains about 32 per cent of iron. — How pure the specimen is I can not be able to determine yet. — Should you desire a comparison advise on desirable I will be glad to open communication, and at once endeavour to place my old machine into working order.

Awaiting your reply

I remain respectfully

W. O. Thompson

Ore milling

GEORGE H. HARTWELL,

POPULAR LECTURER AND WRITER,

Electricity a Specialty.

Address 91 Appleton Street, Cor. of BOSTON ADVERTISER, Boston, Mass.

Aus. Eng. 29/87.

August 26, 87.

My Dear Mr. Tate,

I have received a letter from a friend who has an interest in a gold mine in the West, who has a strong desire to improve the producing capacity of his property by obtaining machinery for separating gold from the base minerals. Will you kindly give me all the information possible about Mr. Edison's Electrical or magnetic ore separator at your earliest convenience, and oblige

Yours very truly

Geo. H. Hartwell.

Mr. Edison on his return will
easily be prepared to reply to
the gold plant question —
the iron magnetic separators
are ready to be put in the
shops to be shipped & we can give you any information
you may require.

Ca. S

Referenzen:
Die Banken und leitenden Geschäftshäuser der Stadt York.

GEO. E. SHERWOOD,
Consultationen in Englisch und Deutsch.

REFERENCES.
The Banks or any of the leading business men of the City of York.

4th Ward Alderman,

OFFICE, NO. 8 SOUTH GEORGE STREET,

York, Pa., Sept. 9th 1889.

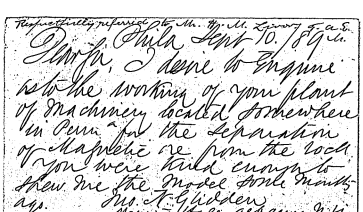
A. G. Jaxe Esq. Ans. Sept. 15/89.

Edenmal Sir!

Yr answer to
your courteous letter of 4th inst. I
send you another specimen of ore,
extracted by means of the machine
created by me six years ago. —
The process is plain & simple and
evidently based upon the same
principle Mr. Edison's is with perhaps
the exception of the discharge apparatus
from the magnetic points.
Awaiting your inspection &
answer

I remain obt.

Geo. E. Sherwood


Respectfully referred to Mr. Wm. M. Lowry [illegible]
Phila Sept 10. 1864
Dear Sir, I desire to Enquire
as to the working of your plant
of Machinery located somewhere
in Penn. for the Separation
of Chaplets &c from the Cock.
You were kind enough to
shew me the Model some months
ago. Yrs. &c. Childers
Samuel Wall acknowledge

ore milling

Ans 10/22/89

The American Metal Company Limited.

43 Exchange Place,

80 WALL STREET.

CABLE ADDRESS "EFFLUX"
N.Y. Box 957.

New York, Oct 19th 1889.

Thomas A. Edison Esq
Llewellyn Park
Orange, N.J.

Dear Sir,

I would recall to your recollection the visit which I paid to your Laboratory about a year ago (accompanied by Mr. H.M. Howe who acted as my adviser) to see the practical operation of your Magnetic Concentrators in the treatment of Iron Ores —

I have now learnt with much pleasure that on your recent visit to Germany you were at the Lothringer Eisenberge Werke at Ars & that you then inspected their property & made some trials in a small way with the separation of the Ars Iron Ores

My friends have sent me a list of the questions you asked & they say they hope to be able to answer them either direct to yourself or through me in a very short time — I also hear from them that you have acquired some Iron Mines the Ore from which to some extent resembles the Ars Ore & that you have obtained very satisfactory results from same with your new Process — From

the whole purport of my friends' communication I infer that they now take the greatest interest in your Magnetic Concentrators and soon as they receive from you the further reports which I understand you were kind enough to promise them, they will be prepared to go very carefully into the whole matter with the view of deciding whether the process could be advantageously employed at their mines.

In order to assist them to this end they have asked me to procure for them as far as is possible estimates of the cost of the necessary plant the amount of royalty to be paid for the patent right &c &c

I shall be very pleased if you can name a time & place convenient to yourself where I could meet you & discuss all these details. Perhaps you would not object to my visiting the Iron Mines before referred to so as to obtain some idea of how the process is working there on a large scale -

I have pleasure in enclosing a specimen of introduction which my friends Messrs Poedjes has been good enough to forward to me, & awaiting the favor of your reply.

I beg to remain

Yours faithfully

J. Edgcumbe

Siemens

SIEMENS & HALSKE
BERLIN, S.W.
94. Markgrafen-Strasse.

Berlin, October 25th 1889
Ltr. 37156.

Thomas A. Edison Esq.
Orange N.J.

Dear Sir:

In regard to our agreement with you about the introduction and use of our electrolytic process in your copper-works, we think it very advantageous and even necessary, if we could make trials with specimens of the ore or matte of copper which you intend to reduce by our process. We are already engaged in building an electrolytic plant of rather big capacity which will enable us to obtain reliable data as to necessary power, to efficiency etc. for commercial electrolytic works.

If you would kindly send to us, as soon as convenient, about a ton of said ore or matte of copper, you would very much oblige

Yours very truly

Siemens & Halske

JOHN BIRKINBINE,
Engineer,
No. 25 N. E. City Hall Square,
N. Juniper St.,
PHILADELPHIA.

Sheets. No.

Philadelphia, October 31st, 1889.

T. A. Edison, Esq.

Orange, N. J.

Dear Sir:

I called on Mr. McLeod today in reference to the Putnam County property of the Philadelphia & Reading Coal & Iron Co, but was unable to see him. I will try again tomorrow.

I enclose you notice of a foreclosure sale of the furnace at Cold Spring N. Y., located on the Hudson River nearly opposite West Point, and about 6 miles from the Reading Company's ore property. I made some inquiries in regard to the matter from those interested, but find thatthe sale is made to protect a claim of about $35,000, and I presume if it is bid up in the neighborhood of $50,000 they will let it go. I doubt however very much whether it will be bid up, and if the property remains practically in the hands of the present owners I think an arrangement could be made to operate the furnace on joint account or possibly to lease it, and I am very sure they would not refuse an offer of $50,000 for it.

In an interview with Mr. Pullman today he stated that anthracite coal could be delivered at the furnace for $3.75 per ton, Connellsville coke $4.75 per ton. I think the brown hematite could be obtained to mix with your magnetites for the production of foundry iron for $3.50 per ton. Limestone costs 90 cents a ton and I think at present foundry iron could be made there for $14.50 per ton.

I have written to Mr. Lee in regard to the Catoctin property and as soon I hear from him I will advise you as to visiting it.

Yours Truly,

Jno Birkinbine

[ENCLOSURE]

Cold Spring NY

FORECLOSURE SALE.

WILL be sold under foreclosure, at Cold Spring, New York, on WEDNESDAY, NOVEMBER 6, 1889, at 11 o'clock A. M., the entire property of the

WEST POINT FURNACE COMPANY,

Consisting of about 40 acres of land at Cold Spring, directly on the Hudson river; water front over 1,200 feet; ample docks, with cranes, and good depth of water for receiving stock and shipping iron; also a double-track trestle connection with the N. Y. C. & H. R. R. R., and thus, with the new Poughkeepsie bridge, in direct rail connection with the coal and coke regions.

The furnace stack is 36 feet bosh by 60 feet high, 8 feet 6 inches hearth, and 7 feet bell. The stack is well built, and the masonry is in perfect order, having been largely reconstructed in 1886.

The bottom of the furnace is well bound with heavy wrought iron jackets, which are water-cooled, fitted with the latest modern improvements, and first-class in every respect. The furnace is fitted for eight 6-inch bosine tuyeres and bosine tuyere breasts. Also closed front and latest style cinder notch, all of which work perfectly. There is ample room to walk around the crucible, so that the furnace is equal in all respect to a column furnace.

The cast-house is brick, with slate roof; the hoist has two platforms with two 8-inch by 10-inch Crane Bros. hoisting engines, new and in perfect order; hoist-tower is brick.

There is a medium sized stock-house, which is also of brick.

There are two horizontal blowing engines, 5 feet diameter and 6 feet stroke, connected at right angles, which can be run 25 revolutions with safety. They are equipped with Bulkley condenser, to run low pressure of steam.

The engine-house is in good order; brick, with slate roof.

There are two sets of cylinder boilers, consisting each of three boilers, 36 inches in diameter by 40 feet long, with 3 heaters 30 inches in diameter; all in good order and ample capacity. There are two "Duplex" Worthington pumps, 10 inch pump barrel; one Knowles, one Cameron, and one extra pump.

There are two feed pumps attached to the main engine, while the extra pump is used to feed in event of other giving out. The boiler-house is of brick, with slate roof, and pumphouse the same.

The reservoir is about 50 feet square, and of best stone masonry. All the pipes and attachments for water in good order.

There is one "Payne" stove, (90 pipes) and five "Pratt" stoves, all of cast iron. They have been thoroughly overhauled, and can heat 11,000 cubic feet of air per minute.

There is a three-story brick office, containing one room fitted up for a chemical laboratory; also blacksmith shop, and sufficient dwellings to accommodate twelve families.

The furnace is fully fluxed up and ready for blast, and there is ample room on the property for another blast furnace or pipe foundry. Ores from Lake Champlain, Columbia county carbonates, Sterling, Forest of Dean, and other mines are available at low freights. Charges on foreign ore from New York tidewater will not exceed 50 cents per ton.

If further information is desired apply to

E. M. COOK, *Trustee,*
115 Broadway, New York,

Or to

J. WESLEY PULLMAN, *Trustee,*
230 South Third street, Philadelphia.

JOHN BIRKINBINE,
Engineer,
No. 25 N. E. City Hall Square,
N. Juniper St.
PHILADELPHIA.

.....Sheets. No.....

Philadelphia, November 2nd, 1888.

T. A. Edison, Esq.

Orange. N. J.

Dear Sir:

I have just received a letter from Mr. Lee, and the programme we could follow out in visiting the Catoctin Furnace property would be about as follows. Leave Philadelphia about 1. P.M., arriving in Baltimore in time to leave there at 4. P.M.; arriving at Mechanicstown about 6. P.M. Drive to Mr. Walsche's house wher where you would have supper and stay all night. Leave the property about 4.30 P.M. the next day and arrive in Philadelphia about 9. P.M.

Yours Truly.

John Birkinbine

I merely send this as Mr Lee suggested by Mr Lee - of Course can vary it or remain longer if necessary - I will advise you Early in the week about the visit

JOHN BIRKINBINE,
ENGINEER,
No. 23 N. E. City Hall Square,
N. Juniper St.,
PHILADELPHIA.

Sheets. No.

Philadelphia, November 5th, 1889.

T. A. Edison, Esq.,

Orange, N. J.

Dear Sir:

I am in receipt of a telegram from Mr. Lee stating that the parties whom we would desire to meet at the Catoctin Maryland iron property are not at home, I therefore presume it will be impracticable to go there this week. I will keep you posted as to what I hear from there.

Yours Truly,

Jno Birkinbine

JOHN BIRKINBINE,
Engineer,
No. 25 N. E. City Hall Square,
N. Juniper St.
PHILADELPHIA.

.....Sheets. No.....

Philadelphia: November 6th. 1889.

T. A. Edison. Esq.

Orange, N.J.

Dear Sir:

I am in receipt of your telegram asking if I could accompany you on Thursday or Friday to Putnam County New York, just as I am about leaving for Port Henry, had I received it earlier this morning I would have changed my arrangement and if I find I can do so will wire you from New York. It would suit me better to go on Saturday or Monday than on the days you name, for when I heard from Mr. Lee that it was unnecessary to make the visit to Maryland this week I made other arrangements, but I will do my best to meet you on Friday. I presume we had better meet at the Grand Central Depot, and I can be there as early as 7 o'clock.

Yours Truly.

John Birkinbine

Please consider any telegrams received tomorrow as taking the place of this — My address on P.R.R. will be % Wilmerding Sherman & Co

JOHN BIRKINBINE,
ENGINEER,
No. 23 N. E. City Hall Square,
N. Juniper St.
PHILADELPHIA.

Philadelphia, Dec 6th 1889.

Mr T. A Edison

Dear Sir As I wired you I will endeavor to return from Pittsburg tomorrow evening reaching N. York 7 A.M. Friday - in which case I will breakfast at Grand Union Hotel opposite Grand central Depot. I find that we can leave N.York as follows

7.15 Am, arrive Peekskill 8.50 am Cold Spring 9.1/4
8 — Am " " 9.22 " " 9.43

I will wire you tomorrow from Pitt Henry stating if I can come & I expect to - please reply there saying where I will meet you

Yours Truly

Form No. 1.

THE WESTERN UNION TELEGRAPH COMPANY.

This Company TRANSMITS and DELIVERS messages only on conditions limiting its liability, which have been assented to by the sender of the following message. Errors can be guarded against only by repeating a message back to the sending station for comparison, and the company will not hold itself liable for errors or delays in transmission or delivery of Unrepeated Messages, beyond the amount of tolls paid thereon, nor in any case where the claim is not presented in writing within sixty days after sending the message.

This is an **UNREPEATED MESSAGE**, and is delivered by request of the sender, under the conditions named above.

THOS. T. ECKERT, General Manager. NORVIN GREEN, President.

NUMBER	SENT BY	RECD BY	CHECK
26	Hui	Bm	21

Received at 924 Nov 6 1889

Dated Paris Oct 6

To T. A. Edison

Orange N.J.

Birkinbine will wire you from
Newyork tonight - or Port Henry
tomorrow. He can go Friday
this Saturday will not better Pitts

EDISON LABORATORY.

TELEGRAM.

November 6, 1889.

From New York.

To Thos. A. Edison

Will endeavor to accompany you Friday. Will telegraph definitely from Port Henry to-morrow.

John Birkinbine.

If I leave NYork friday morning what can what station do I stop at for Putnam Mines

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THOS. T. ECKERT, General Manager. NORVIN GREEN, President.

NUMBER	SENT BY	RECD BY	CHECK
15	Dn		13 Pd

Received at ORANGE, N. J. 930 Nov 7, 188 9

Dated Port Penny Nov 7

To T. A. Edison

Can accompany you either tomorrow or Saturday telegraph here promptly where we can meet

John Burkinbine

Form No. 1.

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THOS. T. ECKERT, General Manager. NORVIN GREEN, President.

NUMBER	SENT BY	RECD BY	CHECK
45	Idy	M	16 Paid

Received at ORANGE, N. J. 926 Nov 7, 188 9

Dated Port Penny Nov 7

To T. A. Edison

Cold Spring Nearest Station could also be reached from Peekskill Where and when shall I meet you

John Burkinbine

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This is an UNREPEATED MESSAGE, and is delivered by request of the sender, under the conditions named above.

THOS. T. ECKERT, General Manager. NORVIN GREEN, President.

NUMBER	SENT BY	RECD BY	CHECK
53	Jn		

Received at ORANGE, N.J. 572 Nov 7 1889

Dated Port Henry Nov 7

To T A Edison

Yes will meet you there or at Grand Central Depot New York

John Birkenbine

EDISON LABORATORY.

TELEGRAM.

Nov. 7th 1889

From T A Edison

To John Birkenbine

Port Henry N.Y.

Will meet you at Grand Central Depot New York.

Nov 5. 3.30 P.M.

T A Edison

Form No. 1.

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This is an UNREPEATED MESSAGE, and is delivered by request of the sender, under the conditions named above.

—THOS. T. ECKERT, General Manager.

—JOHN GREEN, President.

NUMBER	SENT BY	REC'D BY	CHECK
26			

Orange, N. J. 14 Cullen

Received at

Dated Nov 8 1889

To A. E. Sato

Will be
in Philadelphia today
and tomorrow forenoon
can be in Orange Wednesday
John Burkinbine

Ore milling
JOHN BIRKINBINE,
Engineer,
No. 25 N. E. City Hall Square,
N. Jasper St.
PHILADELPHIA.

Ans. Dec. 9/89.

Sheets. No.

Philadelphia, November 28th, 1889.

T. A. Edison, Esq.

Orange. N.J.

Ans. Nov. 29/89

Dear Sir:

I have your inquiry concerning the mines of the Philadelphia & Reading Coal & Iron Co, in Putnam County, N.Y.; and in reply would say that immediately after our visit there, I called on Mr. O'Brien, and discussed the matter fully with him. He stated that the Company were much more anxious to sell than to lease. After going over the matter thoroughly with him I found that I knew a great deal more about the property than the present officers of the Company, and before fixing a price on the property he asked for time to look up the matter, get the maps and other data which the Company have. This I considered would be a good plan, for it would give you more reliable information than we could secure in any other way.

I only this A.M. received an answer from the Company which is as follows:

The Philadelphia & Reading Coal & Iron Co. will give us the privilege of examining all maps, reports, etc. and place all the information it has in our hands. After going over these the Company will consider any proposition either to lease or rent the property, but have no price fixed either for lease or rental.

Mr. O'Brien also says he will be glad to go to Orange to meet you, or join us in a visit to the property.

I would have reported to you in full last week, but I received a telegram from your Laboratory, asking where I could be communicated with, and have been in daily anticipation of hearing from you, or I would otherwise have been over to see you. I have pushed the matter as fast as was practicable, without showing any undue anxiety, which would cause the officers of the P & R C & I Co to imagine that you were in need of the property.

JOHN BIRKINBINE,
Engineer,
No. 25 N. E. City Hall Square,
N. Juniata St.,
PHILADELPHIA.

Sheets. No.

The plan which I would suggest is as follows, but before acting upon it I desire to know if it meets your approval.

1st. I am to obtain from the P & R C & I Co, all maps, reports, analyses, and other information concerning the property, which they have.

2nd. I am to go over these papers thoroughly, so as to be able to report to you their contents, and prepare an abstract giving the extent of the property, development of the ore upon it, with copies of analyses, etc.

3rd. I will then come to Orange at such time as you wish bringing the abstract, and the original papers for consultation with you, when we can formulate some sort of a proposition for either the purchase, or lease, or both of the property. A proposition such, that it will be practically your ultimatum, based upon the most complete data obtainable.

4th. If you should consider another visit advisable I can arrange to have Mr. O'Brien accompany you, and probably also Mr. Luther, under whose direction much of the exploitation of the mine was carried forward.

As Mr. O'Brien reported that Mr. McLeod was not prepared to fix a valuation on the property or to name a price at which it could be leased, I did not think it wise in view of the fact that he had collected the maps and reports together to give any intimation as to what you would probably do. I doubt if any body just now is looking at the property besides yourself, and I thought it was best, under the circumstances to take advantage of the additional information which is now obtainable. Please advise me if I shall carry out the programme as above outlined, and also let me know if you propose making the trip to Maryland shortly. If you are through with the papers concerning the Minnesota property, will you please return them to me, so that I can send them back to the proper party.

Yours Truly.

Jno Birkinbine

re milling

A. B. DICK COMPANY,

MAKERS OF

LABOR-SAVING OFFICE DEVICES,

152-154 LAKE STREET.

THE EDISON MIMEOGRAPH,
THE DICK ADJUSTABLE ARM REST,
The Sherwood Cabinet Letter Files, Check Starters,
Order Holders, Time Files, etc.

Chicago, Nov 30 1889

Mr T. A. Edison

Orange N. J.

My dear Sir:

In reference to Ore milling rights under your patents, I wish to say that I would like the option, say for six months, of forming a Company to put plants in the States of Missouri on a royalty basis or otherwise, with the privilege of forming other Companies in the state of Ohio or Wisconsin if I succeed in Mo. The rights to be exclusive for the states named, and a minimum royalty per annum to be named for each mill erected according to capacity if you so fix. You spoke to me about making a proposition to me while in Orange, and since then I have visited the mines at Rockdeville and Ogden and am impressed with the future in the business, and would like to talk said of the matter at

A. B. DICK COMPANY,

MAKERS OF

LABOR-SAVING OFFICE DEVICES,

152-154 LAKE STREET,

THE EDISON MIMEOGRAPH,
THE DICK ADJUSTABLE ARM REST,
The Sherwood Cabinet Letter Files, Cloak Curtain,
Order Holders, Time Files, etc.

Chicago, ... 18

over as soon as I can hear from you on the subject. Will you also send me a "needle" and any suggestions you may think advisable which would assist me in making the necessary investigations,

Awaiting your Early reply I remain

Very Sincerely Yours
A. B. Dick

P.S. Mr Tate

Please do not forget to see that a Phono. Doll is sent to me as Early as you can arrange to part with them.

Dick

Ore milling

EDITORS:
RICHARD P. ROTHWELL, C. E., *Mining Engineer.*
ROSSITER W. RAYMOND, Ph. D., *Mining Engineer.*

THE ENGINEERING AND MINING JOURNAL

PUBLISHERS:
THE SCIENTIFIC PUBLISHING COMPANY.
R. P. ROTHWELL, *Pres't. and Gen'l. Manager.*
SOPHIA BRAENLICH, *Secretary and Treasurer.*

27 *Park Place.* P. O. Box 1833.

Dictated.

ENCLOSURES
2 ads
Catalogue

New York, U. S. A., December 6th, *1889.*

Thomas A. Edison, Esq.,

The New Jersey & Pennsylvania Concentrating Co.,

Menlo Park, N. J.

Dear Sir:-

I have just noticed the organization of your company for the purpose of concentrating lean iron ore that will not pay for transportation to such a degree that it will be a marketable product. Now as there are a great many deposits of just such ore all over this country which are being left unworked because the cost of concentration is too great I would like to call your attention to the advantages offered by the Journal as an advertising medium through which to bring your company to the attention of people likely to be interested. Suppose you try a card like that of the Hubert Mining Company which is a very attractive advertisement and costs only $204. for a year, and $118. for six months.

We will be greatly pleased if you will send us some particulars about the recent work your magnetic ore separator has been doing and if you will give this matter your favorable consideration.

I inclose schedule of our advertising rates and a little book containing testimonials.

Yours truly, S. Braenlich Sy.

re milling

A. B. DICK COMPANY,

MAKERS OF

LABOR-SAVING OFFICE DEVICES,

152-154 LAKE STREET,

Chicago, Dec 16 1889

THE EDISON MIMEOGRAPH,
THE DICK ADJUSTABLE NEW BEAT,
The Sherwood Cabinet Letter Files, Check Rulers,
Ocder Holders, Time Files, etc.

My dear Jake

I wired you again this morning asking for reply to my telegram and letter of last week, but have not heard from you up to this writing at the close of business Saturday. The parties I have been figuring with to go into the Ore milling business in Mo, are growing impatient, and I must be prepared soon to talk business or let the matter drop from this consideration. Mr Edison promised when I was last in Orange to let me hear from him on the subject, shortly after I got home, and I am still awaiting. If he has decided to withdraw negotiations on this matter for the present, I would consider it a favor if you would so inform me.

Yours Sincerely

A. B. Dick

JOHN BIRKINBINE,
Engineer,
No. 25 N. City Hall Square,
N. Juniper St.
PHILADELPHIA.

Sheets. No.

Philadelphia. December 18th. 1889.

T. A. Edison. Esq.

Orange. N.J.

Dear Sir:

I have not heard from you in reference to coming to Orange to go over that data about the Putnam County iron ore mines. If you wish me to come, and will telegraph me to that effect tomorrow morning I can arrange to go to Orange on Friday.

Yours Truly.

P.S. I have the two reports on the Putnam County property, but no maps, if you prefer to wait until I have these I can defer the visit.

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THOS. T. ECKERT, General Manager.

NORVIN GREEN, President.

NUMBER | SENT BY | RECEIVED | CHECK

Received at ORANGE, N. J. Dec 21 188 9

Dated

To J. A. Edison.

Express me at Mills this afternoon

John Birkinbine.

JOHN BIRKINDINE,
Engineer,
No. 25 N. E. City Hall Square,
N. Queens St.
PHILADELPHIA.

.....Sheets. No. .....

Philadelphia, December 23rd. 1889.

A.E.Tate.Esq.

Edison Laboratory. Orange. N.J. Acct. Exc. 76/68

Dear Sir:

I took lunch today with Mr.Jones Wister of the firm of L.& R.Wister & Co; one of our most prominent iron commission houses, and found that Mr.Wister was thoroughly alive to the value of concentrated ores and ready to handle them. I know of no concern that I think could do better with them than the Messers Wister and think it would be a good idea to open a correspondence with them, concerning the sale in the future of the concentrates which are made by Mr.Edison. As Mr. Edison intimated to me on Saturday that he was going away for a holiday, and I was uncertain whether he or Mr.Livor was the proper party to write to, I have addressed this letter to you. If no arrangement has yet been for the sale of concentrates, and if you will let me know whether Mr.Edison or Mr.Livor will attend to the matter I will take pleasure in facilitating an interview which I trust will be profitable for Mr.E.

I send by same mail a copy of a report on New York iron ores, addressed to Mr.Edison which he wanted. My office stamp will be on the wrapper so that you can distinguish it.

Yours Truly.

John Birkinbine

Livor for

Alfred D. Livor
Jan 2/90

1870

C. Le 16

Georges T. Lewis & Sons.

Ack. Dec. 30/69

Jan 20/1870

George T. Lewis
Edward T. Lewis
Wm. Tilden Lewis.

American Life Ins. & Trust Co.
S.E. cor. 4th & Walnut Sts.
Philadelphia.
(Room 301)

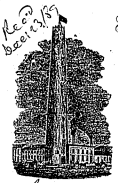
Dec. 27/69

A. O. Tate Esq
Private Secy
Orange No. 2
Memphis,

— On my return to the city after an absence of a few days I find the Enclosed from Mr. John C. Roper, of Cincinnati, in relation to the Zinc & Iron Ore matter — It speaks for itself. Let me hear from you in answer and I am

Very truly Yours
Geo. T. Lewis.

[ENCLOSURE]



Wythe Lead and Zinc Mine Company,

MANUFACTURERS OF

Spelter, Bar and Pig Lead, Drop and Buck Shot, all sizes,

AND DEALERS IN

GENERAL MERCHANDISE.

Post Office Address, AUSTINVILLE, VA. (JOSEPH C. RAPER, Agent.)

Austinville, Va., Dec 20th 89.

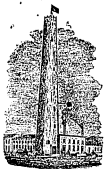
Geo. F. Lewis Esqr.
S. E. Corner 4th & Walnut Sts
Philadelphia Pa.

Please return to

Dear Sir On my return home after a few days absence I find your valued favor of 16th enclosing letter from the Laboratory of Thos. A. Edison 4th which I herewith leave to return. We also received under separate cover the samples of concentrates of iron & zinca which appear to be very good, but it would be entirely too expensive a process to grind down the ores into a powder, what we want is to separate the iron from the zinc in the purest state just as you found it in the sacks of samples sent without grinding it finer.—

It would hardly be worth our while to have any made of the samples sent us per Express if the Edison process will make nearly as good a separation of the ores without further grinding down & the process is not too slow & tedious it is just what we want.

[ENCLOSURE]



Wythe Lead and Zinc Mine Company.

—MANUFACTURERS OF—

Spelter, Bar and Pig Lead, Drop and Buck Shot, all sizes,

—AND DEALERS IN—

GENERAL MERCHANDISE.

Post Office Address, AUSTINVILLE, VA. (JOSEPH C. BAXTER, Agent.)

Austinville, Va., Dec 21/89 18

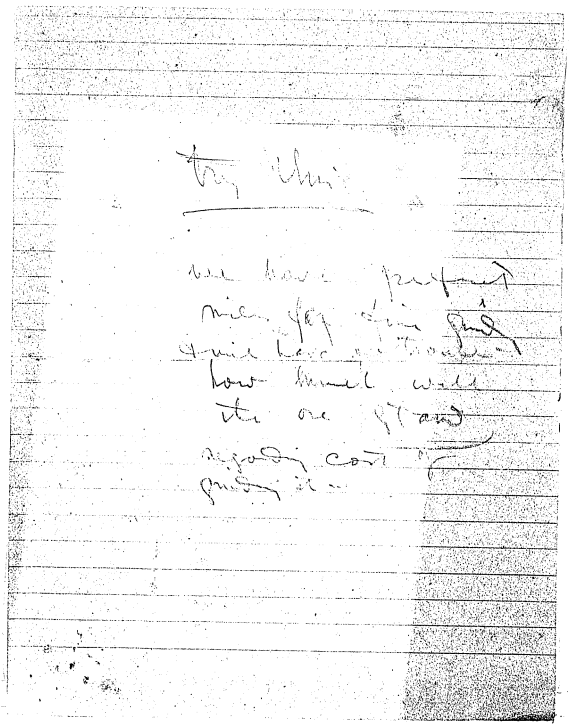
The samples of ores sent you contain say about 10% of Cr hematite of iron. now if the Eddison process will take out say 6% of the iron ore, we think we could use it to advantage.-

We would be very much obliged if you would follow up this matter further as we are inclined to have some faith in the practicability of the Edison process. — Yours very truly

Jno. C. Roper

I have been out in the country for several days with a Mr Frank Jenkins & will try & get him to look over your iron ore prospects on the Simmerman farm. - I am in hopes we can sell Mr Jenkins some iron properties in Wythe & Carroll.

[ENCLOSURE]



Dec mailing

Toledo & Ohio Central Railway.

Thos. Newberry, Jr. President. Presidents Office.

Cleveland, O. Dec. 27 1889

Wm A Edison. Esq.

Instead of waiting to see you here I will go down to Akron Monday Morning next and see you with Mr Miller there. The samples have been expressed with Miller ~~there~~.

Yours truly.

Jno A Glidden

ore milling

J. N. VANCE, PRESIDENT.
JNO. J. JONES, TREAS.
WHEELING, W. VA.

JNO. H. GLIDDEN,
SEC'Y & GEN. MANGR.
CLEVELAND, OHIO.

JOS. PAYETTE,
MINE AGENT,
PERIDOIA, N. Y.

Arnold Ore Company.

Gen'l Office and Mines: Ferrona, Clinton County, N. Y.
Branch Offices: Cleveland, Ohio, Wheeling, W. Va.

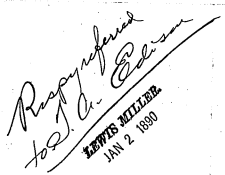
Cleveland O. Dec 31st 1889.

Lewis Miller Esq.
Akron, Ohio.

Dear Sir, I was much interested in Mr Edisons ideas and theories regarding the separation of iron ores and their Concentration. As I have not seen the deposit in New Jersey which Mr Edison proposes to work I cannot form any opinion of it. I rather however that it is a large exposed deposit of very lean ore, say 27%, and that he would obtain about 330 tons of Concentrated ore from 1000 tons of the Mines ore and rock. Now that means the handling of an immense quantity of refuse that is neither food for man nor beast. In general principles it would strike me that if we had a good vein of iron from which fully one third of it would be 64 to 68% and ready marketable without Concentration at a price which would more than Cover the Cost of Mining the entire three thirds it appears to me that the situation with regard to the Arnold mines would be a very different one. Like all large and best vein at our mines — persimmes Mr Edison will probably have to carry out his pet theories to a practical issue when he will be able to take new bearings and discard the unprofitable theories which he may find to exist. I will see you further in regard to this matter as I do not want it to drag.

Yours faithfully,

Jno. H. Glidden


Respectfully
to T. A. Edison
LEWIS MILLER.
JAN 2 1890

Ore Milling

(c) 2

Capital $2.000000

Edison Iron Concentration Co
of New Jersey

520,000 to Edison Ore Milling Co. and a royalty of 20 cents per saleable ton of Concentrate of Licenses — of the 520 000. stock issued 175000 is to rank for dividends as Cash stock but the remainder 350000 is to be held in trust and will not rank for dividends until the Cash stock & the 175000 receivers 20 per Cent dividends. any Earnings above that amount available for dividends is to be divided Equally to the whole stock = The Concentration Co, as subscribers are to subscribe for enough money to put up one complete plant with a Capacity of 200 tons Crude ore per day of 24 hours and are to be given 60 days from the formation of the Co to erect such plant

and 60 days further to determine its success, if after these periods the reports of the subscribers Engineers and the results obtained are satisfactory the Co & Subscribers agree to call up the Subscriptions to the Extent of putting in actual Operation, 150 plants of 200 daily tons Capacity per year until 100 plants are in actual Operation should the Co fail to put in 8 plants in any 6 months the Ore Milling Co is to have the right to license others to put in the number deficient for that period without claim from the Concentrating Co - The method of issuing the stock is to be Thus ~~selon~~ all stock when issued for cash will not by a percent paid on stock & the stock issued subject

to future assessments but for each 100 dollars paid in 1 share will be issued to the subscribers aproportionate share of the 175.000 + also of the 350.000 issued to the Edison Ore Mlg Co. The latter portion however to go into trust but the former to go directly

In Case the first plant is not successful & the subscribers do not desire to go into it further, The affairs of the Co are to be wound up by previous agreement The Machinery sold & the proceeds divided pro rata among the actual Cash subscribers

Note, The Lease is only for Concentrating Magnetic ore those ores which are naturally magnetic & not for Hematite Specular iron which are not found magnetic,

The dale of Michigan Wis & Minn
known as the Lake Superior region
and also Canada is excepted
from this license —
of the Pacific Coast states

No License is to be conveyed to Concentrate
magnetic sands but only magnetite
ore in situ,

1889. Mining - Edison Iron Concentrating Company (D-89-50)

This folder contains correspondence regarding the business of the Edison Iron Concentrating Co. Most of the letters are by Walter S. Mallory, secretary-treasurer and general manager. Some of the documents pertain to production difficulties at the company's Michigan ore milling plant. There are also letters relating to the distribution of stock and other financial matters.

Approximately 50 percent of the documents have been filmed. The following categories of documents have not been filmed: routine correspondence regarding meeting announcements, stock assessments, and stock transfers.

Dre Milling.

Chicago Jan 3 1889

Thos A Edison Esq. Sent check for $5000

Dear Sir:

You will please send me draft for one thousand ~~&~~ two dollars - in payment of 5% assessment on stock of E.I.C.Co. - I find on inquiry that the laws of Ill. are very favorable to stock subscribers ~~that~~ stock holders not liable for amount of stock subscribed and paper are of actual property it is said so light - does that they are considered more favorable than either Michigan or Miami - so have decided to incorporate here — Stock & subscribers will be as below —

T.A. Edison $10000
Geni Miller 10000
Wm H Miller 10000
E Mallory 17500
W Mallory 17500
$75000

Yours Respectfully
W H Mallory Trustee

cc Hulsey.

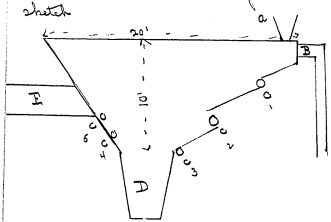
Ans. 5/2/89.

Ann Arbor, Mich. 4/24-89

Dear Mr Edison

Yours 13th was received here having been forwarded to me from Chicago - Before receipt of the thermal column - I have delayed acknowledging hoping to write you fully how matters stood at the plant here - When I returned from Akron - We started and the best results we were able to get on the separation were, Iron 60.58 - P Iron .038. Sulphur trace - and here we stuck - I finally took a small hand magnet and took the iron away from the gangue and found that the gangue was full of dust - and the

assay of the separated products was from 68% Cu. 0.18% sulphur trace - so we started to work to clean the dust out - we found that however, the falling stream took out considerable iron, and not enough dust so abandoned that - So tried various schemes until struck on the one as per sketch



the dust we should collect over the hopper D that can with the magnet - the ore is brought up by elevator and dumped into small hopper A, and falls in front of air that comes out of pipe B, which is some inches - a large joint is blown out into the box - and the iron settles and the dust goes up through E & chute F into bottom of the building - the pipes marked C-1-2-3 are cut at the bottom & bottom sides and are drilled with small holes - so that what ore falls in subjected to more blowing - and also to help the dust up - as we found that when it got out of the dust draft that it settled - the pipes C-4+5 - are to help the dust up and compell it to go into through E - this box we sometimes water an exhaust

that we have put over the
rolls and under the chalky
screen in the pocket - practically
free the iron from all the
dust without any seeming loss
that we can find of the
iron - and also helps the mill
free as the iron can work -
this dust matter has detained us
for the past two weeks and
after a great many annoying delays
we started yesterday - to run - and
the result of yesterdays work
(assayed by myself) was 66.1% iron
and today's work - to-day's test
showed 66.60 - the natural ore being
52.45 - by my figures can only make
analysis of the iron - we will be able

5
soon to help to make some
shipments - but before I send any
report of the cost - which will
be a new one to handle - I wish
to state that it will hardly
be a just one to figure upon -
because our engine (which is
rented) is entirely too small and
that we have to run
very slow as not to shut the
engine down - then the
capacity of the crusher is
very much cut off and
so have to handle the ore at
the crusher very slowly - then
the fact that a great deal
of the ore we find in the

dumb jokes in the hope to put us in the right mood - compelled me to sleep at my hand - which led to the (cost lengthy to our successful we must have a longer cruise on the pole in connection with the "contact" machine - as it takes the sun too long to decide whether the material is ore or rock - and of course makes the ore cost more - so about all we can do now is to run for a short while until we know the system and then shut down until we get a longer engine - and greater capacity at mills - and the (contact machine: In the connection would say that when we come to do that we must have a good practical man who understands machinery - and who can take charge of it and is fully competent to run the mill - if we had had such a man as Smith many mistakes that have cost money and lost us time would not have been made and I do not care again to take the responsibility that I have had to (shoulder in the case - I say this now as I believe that the (plant as a success so far as doing the work is concerned and with a good practical man - the cost will be made much less - I don't claim to know anything about machinery - but can (attend to the business part of the enterprise - I write all this to you thinking that you might (have just the right man at the machine

worker or that possibly you
know of someone – if not I will
try to get track of a good man
here in the west – will not need
him for some two or three weeks
as we are to pay the expense of
traveling expenses would we decide
to engage – I shall have to go
to Boston to see the Champion
people and will stop at Omaha
and get your full report: although
would like to hear at once as
to a man so it can save you how
we are to be recommended I can be
in the book out there – In regard
to the company which I am doing
and which while not productive cannot
measure all purposes for keeping

track of our work – as we can
get within 1% of a diameter result
with a little care – would say
that we obtain the results as
follows – I make this thinking
that possibly it may be of
use at the Exhibition – to me
Enclosed are to the Allentown
people – we take the samples
to be measured and put about
a table spoonfull between two
hard rod bowls – and rub
them well together so to separate
all the particles we find in so much
that a great many grains about as
how considerable adhered attached – and
then grinding when seem to separate

Then take the product in sifted through a 60 mesh screen - and 100 grams weighed out - then it is spread very thinly over a paper - and with a small hand magnet which we cover with tissue paper so to enable us to take the iron off easily, we separate the iron leaving the dust - the iron we spread out & separate two or three times according to the amount of dust collected contained and then go over the dust again to get the iron out usually find some in the dust) then weigh the iron & dust separately - and allow for what is lost usually about two grains and get the percentage of each - the iron percentage multiply by 70.40 and get the metallic iron - and usually very near - and the result can be figured in ten to fifteen minutes so then we are enabled to keep our close track of our work.

Trusting you will pardon me for writing at such length - with kindest respects to Mrs Edman & yourself - I am

Respectfully yours
W. W. Wallow

432 W. Randolph St
Chicago, Ill

Ores. Edison Concentrating Co.

Akron, Ohio Feb. 5th, 1889.

Thomas A. Edison, Esq;

C/O Labratory, Orange N.J.

Dear Sir;

I herewith enclose you the papers for your subscription to capital stock of the Edison Concentrating Co., as per new arrangement we made in regard to the stock when you were here during the Holidays.

You remember at that time we decided to fix the capital stock at $15000.00. You will please sign your name and shares wanted and then forward papers on to E.B.Malory, Baltimore, Maryland for his signature.

I understand from Walters last letter that things are working nicely at the mines, and that he hopes very soon to make several car load shipments of ore to customers. He promises to give us considerable more business if the concentrate works all right.

Yours truly,

Sec'y.

Geo Mellen.

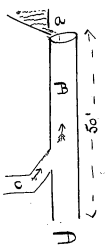
Chicago: 2/19 — 1889

My Dear Mr Edison: —

Have just returned from the north and wish to advise you of results — hence the letter: Soon after seeing you had a break down delaying us considerable — the large link belt elevator — then the worst matter has been the dust: I will take each item separate:

First: — This has been the greatest annoyance all the way through — and at times has been so bad that the men in the mill could hardly stand it — now I think that we have overcome it in the mill — the trouble now being our neighbors who seem to object to it: I should certainly advise the attention of people to make some preparation to take care of the dust — they will find that the increased interest now will pay for the expense of the extra machinery which in my letter — Mr Young — who leaves for the

last tomorrow. Can tell you all about our trouble on this score – the great trouble with us all along has been the fear of burning too much iron + so we have been sparing with the air: from our experience I am inclined to think that the most simple + stable most effective machine would be as per sketch – this has tried only on a small way



a- the hopper - that the fine ore is fed from – into pipe B - which may be 8"-10" 12" as experience will determine C is intermediate pipe from blower –

D - end of pipe that must allow the ore to fall into a bin – length of pipe - 30' to 50' long - as experience will determine – this will only allow the iron - which is heavy – + the larger particles of rock to fall through the pipe — our experience is that the dust that keeps down the metallic iron and makes the trouble in the mill – will all float - and consequently will go out as soon as the air strikes

Chicago, _____ 188_

L. T. & B.

it – When we change the plant at Humboldt – under some better device is suggested – we will probably put this plan in: –

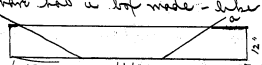
Crusher – Has worked very nicely and does the work as represented: the exact capacity of fine it makes will send you in a day or so – they are making another test to confirm the figures I now have: with the large crusher on the pile the smaller crusher will do a great deal more work – as the large bunker now holds it – as to capacity – although it has crushed everything that we could put into it: –

Rolls: They are not the success I had looked – the edges seem to chip off – and they consume a great deal of power – without corresponding work being done – I am informally making inquiries at Allentown as to the Stationary mill – the 12" second hand mill about which I spoke can be

bought cheap -

The Separator - It does its work nicely - the trouble we have being the shake of the building - I presume we will have to put the machine down nearer the ground - than at present - then in regard to the face of the magnet - it seem to me that it would do better work if it was not quite so wide - one is 2" wider than the one at Ormsy - we have great latter with the iron sticking to the magnet - however I can safely say that the machine is a decided success - the belting all being on the other machinery -

Hopper - we found the large hopper entirely too large for our capacity - and that when the hopper ran about half out - the stream would commence to fall evenly - then the slit was too long so we have had a box made - below sketch



the box is 3' wide inside - + rests on the iron splatter - it is 12" high - the slides a-a - are arranged so we can make any length of stream - and we have it so adjusted that it will not get into one of

Chicago, _____ 188_

J. T. A. E. -

of our product - on the magnamp you through often a mill explain later - have to allow for that - we find this little loop helps the stream very much, we can run the hopper almost empty before the stream varies

Partitions - thus we have had made separate - and the smaller one stands about 1/2" from plumb line from center of slot - towards the concentrate partition - this passing very little iron - which as it is hard to crush - is desirable - I figure that we do not loose more than 5% - thus the longer partition we place 4" from the smaller one - making the magnamp 4" instead of 2" as at the laboratory - tests showed as follows - the stream 3" from face of magnet - we had a tin loop made 1/2" wide - 1 1/2" long - and held it close to the long partition (4" from smaller one) and on the magnamp side - catching ore ~~the concentrate~~ that would come between 3 1/2" & 4"

the magnamyte - the result was 63.104% - then took it on other side of partition (concentrate side) which gave 64.50% - then made the trim 1/4" wide - & taking on the magnamyte side gave 63.56 - while on the concentrate side (1/4") gave 64.21 - so we determined to cut the large partition at 4" from small one and return the ore that goes through the magnamyte into large elevator boot & from there it is hosted back into dust bin & goes through again - We increase the % of metallic iron - by so doing - and as the capacity of the separator is so large we can afford to do so -

Trimp pile: This we have been watching very closely - and although while I do not want to state so as a fact now - because want to watch it longer my opinion is - that we can ship at least 50% of the ore without separating & crushing to so much as first class ore - and 15 to 20% - as second class ore - & the balance would go to the mill - if we can do this it will increase our output very largely - and also our profits - we find the ore very much better than had expected - as we

IRON and STEEL
LAP WELDED
Tank & Sheet Iron
RIVETS, ANGLES
BOILER PLATES
BOILER TUBES
Tank & Sheet Steel
BEAM & TEE IRON
WAREHOUSE 70 & 72 RANDOLPH ST.
OFFICE 72 RANDOLPH ST.

Chicago, _____ 188_

4. Jan. 6

get into the pile — and on a large proportion of the ore in like shape

when we come to crush it to smaller pieces if the above rock through at least 50% would make first class ore — and we find lots of just such pieces — my idea is to handle it as follows — get a large crusher — crush everything down to 5" or 6" cubes or perhaps 4" cubes — then pass through the new separator — & the have three pieces sorted — for first class ore — second class — both of which are saleable — then the balance will go to the mill: by doing this at least 65 to 70% of our output would be no longer pieces and of course quite saleable — & it would help us enormously if the small

at least five ore —

New Separator — wants to be built so that it will handle at least 4" or 5" cubes — because we will find considerable ore - that the longest size will work well — & it will save considerable expense in handling — if all the ore we mine 3" cubes it would make about 215 pieces to the ton — while at 5" cube — would be only about 100 pieces to the ton — so as every piece must be looked at it would take a great deal more time on the smaller pcs — so if the machine can be made to handle 5" cube (25#) we want it just as long as possible (3" cube would weigh about 10#)

Policy — my idea now is to run a couple of weeks or so & possibly longer — then shut down — and add the new crusher & separator — increase the mill capacity — by some machine for reducing the ore — then buy new engines — and figure to get full capacity in new fitted up — the present crusher could be made to do three times what the rolls will permit

OFFICE 22 N. CANDOLPH ST.
IRON and STEEL
LAP WELDED
Tank & Sheet Iron
RIVETS ANGLES
W. S. Kelley & Co.
CHICAGO, ILL.
BOILER PLATES
BOILER TUBES
Tank & Sheet Steel
BEAM & TEE IRON
WAREHOUSE 22 TO 28 N. CANDOLPH ST.

Chicago, _____ 188_

5. J.A.G. –

– then we will be in a position to work cheaply – Manager: For machinery – I have advantages – and find nothing in the way of economy that helps us any. Am now figuring with Fraser & Chalmers practical mill men – the men who have charge of erecting & designing all their reduction plants – & who have been right hand men for a long time – he is fully posted – I think is the best man available – the only trouble being salary – which will be $ 5000 – per year – he does think could save us lots of money if we buy our machinery and I am in favor of taking him on – Stock will help him in the shop until we shut down – we have got to have an experienced man at the head of the machine shop. If we want to work cheaply – I have had all the experience I want with inexperienced men – it don't pay – should like

to have your ideas on this question. Trusting you will pardon the length of this - and with kindest remembrances to Mrs Edison & yourself - I am

Yours Respectfully
W. H. Mallory.

(Personally I have a great admiration for a piece of native ore that goes 61% in metallic iron - feel like taking off my hat to it - when I see it - we have all had an experience & I am sure it has done us all good)

CHICAGO MARCH 4TH 89

Ans 3/9/89.

MR THOS. A. EDISON:-

ORANGE, N. J.

DEAR SIR:- I AM IN RECEIPT OF YOURS OF THE 28TH ULTO. ENCLOSING PROXY TO VOTE FOR IRA. H. MILLER AND SAME HAS BEEN FORWARDED TO HIM. WE HELD OUR MEETING ON SATURDAY, ELECTING YOU AS PRESIDENT, MR IRA MILLER AS VICE PRESIDENT, AND THE WRITER AS SECRETARY, TREASURER, AND GENERAL MANAGER. EXPECT TO SEND YOU A REPORT IN A DAY OR TWO, AS TO CAPACITY, COST AND WHAT WE HAVE SPENT THE MONEY FOR, AND also PROSPECTS.

RESPECTFULLY YOURS.

W. H. Mallory

W. H. M.

Chicago, 3/7 1889

Thos. A. Edison Esq.

Dear Sir

Ans. 15/3/89

Enclosed please find statement of "Receipts and Expenditures". I regret having to make such a statement as to cost - but did my best to keep it down - We are now shipping sample lots to the various mills and will soon know how saleable our product is going to be - until then we do not want to invest any more money: we however owe about $750 - and mills owe $500 net on April 1st so have decided to call an assessment of 1% - to cover all bills - and then if we succeed in to results - can increase capacity as proposed: and call for additional money: The mills seem to be running nicely now - 1% on called for assessment on Tuesday we have not yet received

Chicago, _____ 188_

T.A.E.

incorporation papers: Trusting that the accident reported in the papers was not as serious as reported. I am

Yours Respectfully
W. H. Mallory

Enclose notice.

[ENCLOSURE]

Ore Milling

Receipts

Investment Accounts	T. A. Edison	3000 —	
" "	Lewis Miller	3000 —	
" "	Jno. N. Miller	3000 —	
" "	E.P. Mallory	2625 —	
" "	W. S. Mallory	5625 —	
Advanced by W. S. M. - to Jony Mallory		17460	17421 60

Expenditures

		First Cost of Machinery Building & Ind. as per original estimate	Cost of Machinery Land & Improvements not included in original estimate
Machinery -	Actual Cost	6743 48	
"	Freight on same	443 61	
"	Labor placing same	83 07	
Building -	Cost Material & this includes all material used inside as well as out	1597 92	
"	Labor erecting & freight	19 80 7	
Changes Machinery - To correct mistakes made in erecting, and to make it run		1109 05	
Traveling Expenses - Persons to erection of plant sent and costs in investigation		698 87	
" " during erection of plant this includes			
" " Wages Supt. O.S.K. Sidwell, Turbyn		382 97	
" " Difference to and from mills		118 05	
Office Expense - Books - Telegrams - mailing cards &c.		87 28	
Wood Mill - at mill - to keep steam up at night		142 00	
Board - O.S. Kenney		169 00	
" Superintendent - Machinist &c		60 84	
Rent Engine -		93 00	
Test account - All Analysis - and freight + express on samples tested at Laboratory		413 30	
Rent account - 5 months		1000 00	
Law Expenses - On contracts		164 85	
Sundries & Fixtures - Scales - buckets - shovels - push &c		476 03	
Drayage		73 30	
Oil & Waste		20 44	
Fuel account -		284 71	
Well account - for water for boiler		1136 85	
Firemen - Coal mill		3840 00	
Track account - Advanced A & P for switch to be refunded as more are connected shipments		1650 0	
Total Cost Machinery Building - (original estimate)		10778 15	
" " - Changes + extras entered		5781 33	16559 48
			862 12

Cr.

W. A. Rowe -	Advanced for petty cash + salary from Nov to date	333 29	
Labor -	" Daily salaries - Mch. Mill	1110 30	
W. S. Mallory	" salary Nov to date	1946 0	
Watchman -	for ground to be deducted from daily salary	80 50	
Yoke from Work -		75	
W. S. Mallory	- for Traveling Exp	25 25	694 75
	Cash balance		167 37
	" balance charge book	148 07	
	" Daily salary	19 30	167 37

We owe for Daily bills (machinery) about $80 - (amount bills not at Ormsby) also about $50 for Daily salary — amount became

Jas. P. Grenzel, President.
Thos. M. Miller, Secretary.

Lewis Miller, Superintendent.
D. K. Wright, Treasurer.

Aultman, Miller & Co.

Manufacturers of the

BUCKEYE MOWERS, REAPERS AND BINDERS.

Akron, O., April 10th 1889.

Thomas A.Edison, Esq.,

Orange, N.J.

Dear Brother:-

I am in receipt of a letter from W.S.Mallory advising me that he still fails to get the satisfactory results that we must have from the Concentrating machine in Michigan in order to make our product saleable and profitable for us to handle.

Now, as I understand it from Mr. Mallorys' letter, he has carried out to the best of his ability all the pointers that you gave him when he was last at your Labratory and he has fully done his best to produce a satisfactory product but absolutely fails to get a concentrate that will reach an average of 65 % which he claims he must have before we can make any money.

Now, the question is with us whether it is really not the duty of the Parent Company to send a man up to Humbolt, Michigan and put our machine in shape there so that it will produce the result that we must have from it and which the Parent Co., have guaranteed could be done; in other words, we as a sub company, have done our very best to make this process a success in

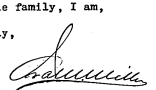
Humbolt but have failed to succeed and therefore, we feel that the Parent Co., are duty bound to protect us in making us good for our out-lay or send parties to Humbolt who can operate the machine and make it bring forth the guaranteed results.

Walter is now pretty badly stuck and has written us whether he better not shut down the mill and discharge the men until we can get a reply from you advising us what to do.

We have wired Walter to the effett that we would immediately write to you and get your advises and then wire him; so please let us hear from you promptly on receipt of this letter so that we can avoid losing any further time and money.

With kindest regards to all the family, I am,

Yours truly,



ore Milling

Chicago, 4/12 1889

My Dear Mr Edwin ack. 16/4/89,

Your telegram "letter shut down for a month, so we can experiment - Ship two 100 tons ore, and two 100 tons crushed ore just as in hopper. Express twenty five pounds of latter immediately and five samples assorted ore" is quite at hand + noted: I will send the necessary money to mill today + shut some down tomorrow. the ore as per telegram will have shipped at once - We shipped three 100 tons sometime ago, and should think that they might be at laboratory before this - I will close matters up here and reach the laboratory sometime next week - coming via Akron -

Respectfully yours
T McAuley

Ans. July 2/89

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Chicago July 1st 1889

My Dear Mr Edison:-

Should be pleased to hear what the prospects are for shipment of the new machine - Am very anxious to get at work again and also to know how to plan for our men:- Trusting that all at the home are well - & with kindest regards to them all & yourself. I am

Respectfully Yours

W S Mallory

Ans. July 6/89

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Chicago, July 1-89

My Dear Mr Edison

In runs of the a.m. I neglected to ask what progress is being made in dumping the ore. I find that the Chicago blast furnace men are very much against the Jersey fine ore, and although it is only a notion - which time will wipe out - it will be quite necessary if possible to cater to them until we get it introduced - & then I believe that in a short time they will be glad to get it fine - this is the market we want - as there is more Bessemer ore used in Chicago than any other city in United States. so we must try to get started with the mill here - in good shape at first - Yours &c

W. S. Mallory

W. S. MALLORY & CO.

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Box from Mallory and the man Wood

Chicago July 6-89

My Dear Mr Edison

By express I send you a box of ore, which if you can find someway to work — you can be well repaid — the property is owned by some Chicago people who have money — but who them for have been unable to find anyway to get any value out of the ore — the following is the description they give me — "the manganese property is a patented one 600' x 1500' — from 80 assays of carbonates and chlorides (from deep workings) $79.00 per ton of silver is the average — The outcrop on this and adjacent property is manganese — we cannot give you the estimate tonnage, but it is large and easily worked — likely could be worked for $5.00 per ton as it is in good working shape — —

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Chicago

V.

Carnegie Bros. & Co. of Pittsburgh – analysis (they treated to find the value as manganese) in ore here given

Silica – –	22.400
Iron – –	1.240
Manganese – –	39.042
Phosphorus – –	.028
Sulphur – –	trace
Ounces gold per ton –	2.700 –

they say "the ore is too high in silica to be used in the manufacture of manganese metals – but that it is the best kind of gold proposition" – the 2.700/1000 ounces gold is equal to $54.00 – the manganese freed from silica and concentrated to 68 per cent with .04 phosphorus would be equally valuable" –

What they want is of course to save both the gold and the manganese – but

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Chicago.

3

no one that could it be accomplished - they would like to get me or the other - if you can find Something that will do the work - you could receive my liberal returns - Trusting that you will find time to look into the matter - I am

Respectfully Yours

W. S. Mallory

Have closed contract with the F & C men - & expect to send them east about July 15th

Geo. W. Crouse, President.
Chas. M. Miller, Secretary.

Lewis Miller, Superintendent.
R. McWright, Treasurer.

Canton, Ohio, July 15/89.

Aultman, Miller & Co.

Manufacturers of
BUCKEYE MOWERS, REAPERS AND BINDERS.

Akron, Ohio July 9th, 1889.

Something wrong
The total don't foot up
100 —

Thomas A. Edison,

Orange, N.J.

Dear Sir:- Enclosed I hand you a card containing analysis of that sifted iron ore, showing 41.5% iron; 5.48% silica; .048% phosporous; .391% manganese; 4.86% alumina and .141% sulphur. I hardly understand how this can be correct and yet it is by an established firm as you will see by the card. It don't seem as though we had added anything to the proportionate amount of iron even though we have taken half of the other material away. Write me your opinion about it.

The original ore had about 20 per cent iron in it

but sample reduced the Concentrate to 41.5 by tumbling

ENCLOSURE
Analysis

Yours resp'y,

probably could get it to 45 per cent

Luthuch is equivalent Lewis Miller

probably 1/2 a 5% per Cent manganese etc

The original ore did not have 25 per cent of iron. What was left assayed 41.5 — The left 4 percent of Alumina could be got rid of by tumbling

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END

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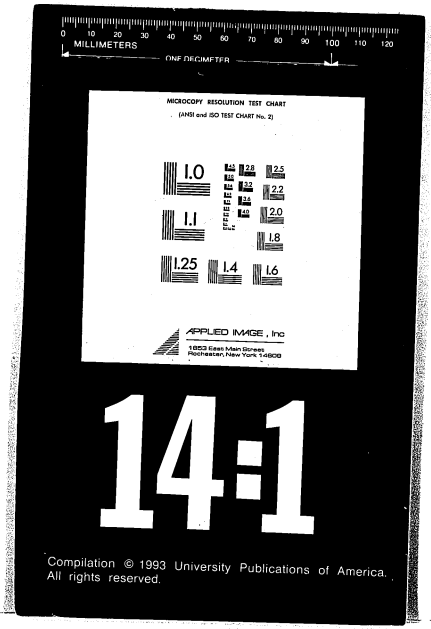

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